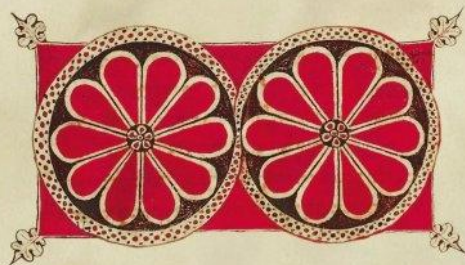




*Radical Frame Semantics
and Biblical Hebrew*

EXPLORING LEXICAL SEMANTICS



STEPHEN L. SHEAD

BRILL

Radical Frame Semantics and Biblical Hebrew

Biblical Interpretation Series

Editors

Paul Anderson
Yvonne Sherwood

Associate Editor

Rolf Rendtorff

Editorial Advisory Board

Janice Capel Anderson – Phyllis A. Bird
Erhard Blum – Werner H. Kelber
Ekkehard W. Stegemann – Vincent L. Wimbush
Jean Zumstein

VOLUME 108

Radical Frame Semantics and Biblical Hebrew

Exploring Lexical Semantics

By

Stephen L. Shead



BRILL

LEIDEN • BOSTON

2011

This book is printed on acid-free paper.

FrameNet data Release 1.3 used by permission of the FrameNet Project, International Computer Science Institute, Berkeley, California (<http://framenet.icsi.berkeley.edu>). Extracts and figures from William Croft and D. Alan Cruse, *Cognitive linguistics* (© William Croft, D. Alan Cruse, 2004), published by Cambridge University Press, are reproduced with permission.

Library of Congress Cataloging-in-Publication Data

Shed, Stephen L.

Radical frame semantics and biblical Hebrew : exploring lexical semantics / by Stephen Shed.

p. cm. -- (Biblical interpretation series, ISSN 0928-0731 ; v. 108)

Includes bibliographical references and index.

ISBN 978-90-04-18839-6 (hardback : alk. paper) 1. Hebrew language--Semantics. 2. Hebrew language--Lexicology. 3. Bible. O.T.--Language, style. I. Title. II. Series.

PJ4810.S54 2011

492.4'5--dc23

2011029238

ISSN 0928-0731

ISBN 978 90 04 18839 6

Copyright 2011 by Koninklijke Brill NV, Leiden, The Netherlands.

Koninklijke Brill NV incorporates the imprints Brill, Global Oriental, Hotei Publishing, IDC Publishers, Martinus Nijhoff Publishers and VSP.

All rights reserved. No part of this publication may be reproduced, translated, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission from the publisher.

Authorization to photocopy items for internal or personal use is granted by Koninklijke Brill NV provided that the appropriate fees are paid directly to The Copyright Clearance Center, 222 Rosewood Drive, Suite 910, Danvers, MA 01923, USA.

Fees are subject to change.

To Rebecca

The development of a Radical Templatic Phonology and a Radical Frame Semantics should be a priority for nonreductionist linguistic theory. . . .

I assume that the semantic structures in particular constructions function as units; these units would be the primitives of Radical Frame Semantics.

—William Croft, *Radical Construction Grammar*

Look, I waited for your words;
I listened for your insights,
while you explored utterances.

—Job 32:11

He saw [wisdom] and appraised it;
he established it and explored it.
And he said to humanity,
“Look! The fear of the Lord—that is wisdom,
and to turn away from evil is understanding.”

—Job 28:27–28

CONTENTS

List of Figures	xiii
List of Tables	xv
Preface	xvii
Abbreviations	xix
1. Books of the Hebrew Bible	xix
2. General abbreviations	xix
3. Secondary sources	xx
4. Bible translations	xxi
5. Interlinear morpheme translation	xxii
Symbols	xxv
Hebrew transliteration	xxvii

I Introduction	1
1. The gap	1
2. Bridging the gap	3
3. Goals of the study	4
4. Outline	5
5. Conventions and terminology	5
6. Interlinear morpheme translation	6

PART ONE

FOUNDATIONS FOR LEXICAL SEMANTICS

II Structural semantics and semantic fields	13
1. Sense relations	13
2. Paradigmatic relations	14
2.1 Hyponymy	15
2.2 Meronymy	16
2.3 Synonymy	16
2.4 Compatibility	18
2.5 Incompatibility and opposition	19
3. Syntagmatic relations	22
4. Semantic field theory	25
5. Terminological problems	27
6. Types of lexical relationship	28
III Cognitive semantics and semantic frames	33
1. The dynamic construal theory of meaning	35

2. Lexical meaning versus encyclopaedic information?	39
3. Dynamic construal and delineation of senses	43
4. Semantic frames	48
5. Dynamic construal, frames, sense, and sense relations.	55
6. Metaphor, mental spaces, and frame blending.	57
6.1 Cognitive Metaphor Theory	57
6.2 Mental spaces and Blending Theory	59
6.3 CMT and conventionalised metaphors.	61
6.4 Conventionalised metaphors, novel metaphors, and lexicology	63
7. Concluding remarks.	65
IV From typology to Radical Construction Grammar	67
1. Construction grammar(s)	69
1.1 Background.	70
1.2 Constructions and the symbolic nature of language.	73
1.3 Construction inheritance relations and the ‘constructicon’	80
1.4 Construction instances: nesting and blending.	86
2. Deconstructing grammatical categories and syntactic relations	87
2.1 Atomic, schematic categories: universal, global, or constructional?	87
2.2 Distributional analysis.	89
2.3 The typological flaw: methodological opportunism	90
2.4 The logical flaw: vicious circularity	92
2.5 Syntactic relations: real or imaginary?	92
3. Reconstructing grammatical categories.	94
3.1 Parts of speech	94
3.2 Heads, arguments, adjuncts, and valence in traditional grammar.	99
3.3 Heads, arguments, adjuncts, and valence in RCG.	103
V Frame Semantics and FrameNet	107
1. Frames, frame elements and lexical units	109
1.1 Lexical units	109
1.2 Frames	110
1.3 Frame elements.	111
1.4 Core and peripheral FEs	118
1.5 Extra-thematic FEs.	120
1.6 Missing frame elements: null instantiation	122

2. FrameNet annotation.	126
2.1 Phrase types and grammatical functions	127
2.2 Frame-bearing words, slot-fillers, and ‘Gov-X annotation’	128
3. Valence description	131
4. More FrameNet concepts	132
4.1 Frame relations and FE relations	133
4.2 Semantic types	135
4.3 Support constructions	136
5. FrameNet reports	137
6. Lexicographic annotation and full-text annotation.	138

PART TWO

CRITIQUING AND ENHANCING FRAMENET

VI Re-framing the theory: Semantics	145
1. Categorising frame elements.	145
1.1 Core and peripheral FEs	145
1.2 Core-peripheral variation between LUs in a frame.	149
2. Target annotation and concept profiles	152
3. Null instantiation, utterances, and context.	153
3.1 DNI or INI.	155
3.2 Null instantiation (or not).	156
4. Frame inheritance and the categorisation triangle	157
5. Metaphor and dynamic construal	159
VII Re-Constructing the theory: Grammar	163
1. FrameNet and RCG: A partial integration	164
2. Two simple examples.	165
3. Multi-level analysis of complex constructions.	166
4. Multi-level analysis with adjunct constructions.	168
5. Construction blending.	170
6. Constructions and valence patterns.	172
7. Looking forward.	173
7.1 Frame semantics and the ‘constructicon’	175
7.2 Frame semantics and the ‘constructicon’	177

PART THREE

FRAME SEMANTICS AND BIBLICAL HEBREW

VIII	Applying the framework to biblical Hebrew	181
1.	The ancient language problem	181
2.	Corpus and parameters of the study	184
3.	HebrewNet: Frame-based annotation of the MT	187
3.1	Frames, FEs, and LUs	188
3.2	The annotation process	188
3.3	Further features and limitations	192
IX	A cognitive analysis of exploring, searching, and seeking ...	193
1.	Foundational frames: [EXPLORE], [SEARCH], and [SEEK] ..	196
1.1	Comparing and relating the frames	198
1.2	[EXPLORE] vs. [SEARCH], and the specific/non-specific distinction	201
1.3	The frames as subframes in complex events	207
2.	Metaphoric extensions	210
2.1	[EXPLORE]	211
2.2	[SEEK SCENARIO]	220
2.3	[SEEK]	221
2.4	Locating instances	226
3.	Temporal profiles, resultative senses, and metonymic shifts	227
3.1	Telic processes	227
3.2	Variations in profiling of [EXPLORE], [SEARCH], and [SEEK]	230
4.	Concluding remarks	234
X	חקר and terms for exploring and searching in BH	236
1.	חקר: Preliminary presentation of the data	236
1.1	Initial categorisation of occurrences	236
1.2	Translations in the Septuagint	244
1.3	Parallels and potential paradigmatic relationships in the MT	245
1.4	“Search out” and ambiguous categorisations	249
2.	Positive instances: Exegetical notes	250
2.1	Deuteronomy 13:15[14]	250
2.2	Judges 5:16	250
2.3	Judges 18:2	251
2.4	Jeremiah 17:10	252

2.5 Jeremiah 31:37.....	252
2.6 Ezekiel 39:14.....	253
2.7 Psalm 44:22[21].....	253
2.8 Psalm 95:4.....	256
2.9 Job 5:27.....	256
2.10 Job 8:8.....	257
2.11 Job 11:7; 38:16.....	259
2.12 Job 28:3.....	260
2.13 Job 28:27.....	262
2.14 Job 32:11.....	263
2.15 Proverbs 23:30.....	263
2.16 Proverbs 25:2.....	264
2.17 Proverbs 25:27.....	265
2.18 Proverbs 28:11.....	266
2.19 Ecclesiastes 12:9.....	266
3. Negated instances: General considerations.....	268
3.1 Uses of אֵין in BH.....	268
3.2 Negated חקר occurrences in the Versions.....	271
3.3 “Without limit”.....	276
3.4 Impossibility, or factual.....	277
4. Negated instances: Exegetical notes.....	279
4.1 1 Kgs 7:47 and 2 Chronicles 4:18.....	279
4.2 Isaiah 40:28.....	280
4.3 Job 5:9; 9:10.....	280
4.4 Job 36:26.....	281
4.5 Proverbs 25:3.....	282
5. Paradigmatic relations: Other terms and frames related to חקר.....	284
5.1 חפש.....	286
5.2 תור.....	290
5.3 רגל.....	292
5.4 בחן.....	293
5.5 בקש and דרש.....	295
6. Towards a frame account of חקר terms.....	297
6.1 AREA VS. SOUGHT ENTITY.....	297
6.2 Temporal profile, completive and resultative uses, metonymic shifts.....	300
6.3 חקר vs. חפש, and [SEARCH]/[SEEK] variation.....	301
6.4 Judicial uses.....	303

7. Frames, lexical units, and annotations	304
7.1 [EXPLORE]	305
7.2 [SEARCH]	308
7.3 [INVESTIGATE]	309
7.4 [EXAMINE PERSON]	312
7.5 [BECOME AWARE OF]	316
7.6 [UNDERSTANDING]	317
7.7 [UNKNOWN]	318
8. Concluding remarks.	320
8.1 Exploring, searching, and seeking	320
8.2 Methodology.	321
XI חקר in the Lexica	323
1. Older lexica: BDB and <i>HALAT/HALOT</i>	323
2. Theological dictionaries: <i>TDOT</i> and <i>NIDOTTE</i>	324
3. Modern lexica: <i>DCH</i> , Alonso Schökel, and <i>SDBH</i>	326
3.1 <i>DCH</i> (David Clines)	326
3.2 Alonso Schökel	328
3.3 <i>SDBH</i> (Reinier de Blois)	329
4. Summary	333
XII Conclusions.	334
1. The benefits of Radical Frame Semantics	335
2. The potential of Radical Frame Semantics	338
List of works cited	339
Index of subjects	357
Index of biblical references	368
Index of authors	372
Index of Hebrew terms	376

LIST OF FIGURES

Figure 2.1	The <i>long:short</i> scale	20
Figure 2.2	The <i>cold:hot</i> scale	21
Figure 3.1	Relationship between a word form, profile, and frame	52
Figure 4.1	A componential model of grammar	71
Figure 4.2	The structure of a construction	75
Figure 4.3	The formal structure of a construction	75
Figure 4.4	The semantic structure of a construction	77
Figure 4.5	The symbolic structure of a construction	77
Figure 4.6	The symbolic structure of a BH Nominal Classifying Predication	78
Figure 4.7	Constructions as atomic or complex, substantive or schematic	79
Figure 4.8	Some uses of <i>catch</i> in the construction taxonomy. . . .	83
Figure 4.9	A construction with multiple parents	85
Figure 5.1	Frame-semantic analysis of a [QUARREL]. <i>argue</i> instance	131
Figure 5.2	FE configuration of a [QUARREL]. <i>argue</i> sentence	132
Figure 5.3	Valence pattern for a [QUARREL]. <i>argue</i> sentence	132
Figure 5.4	Frame Report for [APPLY HEAT]	139
Figure 5.5	Lexical Unit Report for [APPLY HEAT]. <i>cook.v</i>	140
Figure 5.6	Annotation Report for [APPLY HEAT]. <i>cook.v</i>	141
Figure 6.1	The categorisation triangle for BALANCE	158
Figure 6.2	A THEORY IS A BUILDING: initial frames	160
Figure 6.3	A THEORY IS A BUILDING: frames for <i>demolish</i>	161
Figure 7.1	Multi-level analysis of a complex construction: Job 19:25	168
Figure 7.2	Multi-level analysis with an Adjunct construction . . .	169
Figure 7.3	Valence descriptions in (a) FrameNet and (b) Radical Frame Semantics	174
Figure 8.1	HebrewNet Frame Editor	189
Figure 8.2	HebrewNet FE and LU Editors	189
Figure 8.3	Searching for instances of a lemma in the MT	190
Figure 8.4	HebrewNet Annotation Editor (2 Samuel 10:3)	190
Figure 9.1	The trajectory-landmark (tr-lm) structure of [EXPLORE], [SEARCH], and [SEEK]	197
Figure 9.2	The basic relationships between [EXPLORE], [SEARCH], and [SEEK]	202

Figure 9.3	Specific and non-specific readings for [SEARCH] and [SEEK]	205
Figure 9.4	[EXPLORE], [SEARCH], and [SEEK] as subframes of complex events	210
Figure 9.5	Extended complex events	210
Figure 9.6	[EXPLORE]→[INVESTIGATE]	213
Figure 9.7	Extensions of [EXPLORE] and [SCRUTINY]: frames and complex events	218
Figure 9.8	[SEEK SCENARIO]→[SEEK TO KNOW SCENARIO]: frames and complex events	222
Figure 9.9	[SEEK]→[ATTEMPT]: frames and complex events	226

LIST OF TABLES

Table 1.1	IMT categories for highly fused prepositions	8
Table 4.1	Distribution patterns for typical Direct Object constructions	90
Table 4.2	Actual distribution patterns for Direct Object constructions	91
Table 4.3	Semantic characterisation of objects, properties, and actions	95
Table 5.1	Typical thematic roles	113
Table 5.2	Comparing <i>buy</i> and <i>sell</i> using thematic roles	115
Table 5.3	Comparing <i>buy</i> and <i>sell</i> using frame-specific roles	116
Table 5.4	Comparing different parts of speech using frame-specific roles	117
Table 6.1	Instantiation statistics for three FEs in the [REVENGE] frame	147
Table 10.1	LXX translations of חקר occurrences	246
Table 10.2	Compatible and incompatible terms parallel to חקר in the HB	248
Table 10.3	Negated occurrences of חקר in the Versions	274
Table 10.4	Potential semantic near-neighbours of חקר	285
Table 10.5	Words potentially subsequent to חקר in complex event chains	286
Table 10.6	חפש: AREA VS. SOUGHT ENTITY and physical vs. extended	289
Table 10.7	Valence description for [EXPLORE]. חקר	307
Table 10.8	Valence description for [EXPLORE]. נחקר	307
Table 10.9	Valence description for [EXPLORE]. חקרה	307
Table 10.10	Valence description for [SEARCH]. חקר	309
Table 10.11	Valence description for [INVESTIGATE]. חקר	311
Table 10.12	Valence description for [INVESTIGATE]. נחקר	311
Table 10.13	Valence description for [INVESTIGATE]. חקרה	312
Table 10.14	Valence description for [INVESTIGATE]. חקרה	312
Table 10.15	Valence description for [EXAMINE PERSON]. חקר	314
Table 10.16	Valence description for [EXAMINE PERSON]. חקרה	315
Table 10.17	Valence description for [BECOME AWARE OF]. חקר	317
Table 10.18	Valence description for [UNDERSTANDING]. חקר	318
Table 10.19	Valence description for [UNKNOWN]. חקר	319
Table 10.20	Valence description for [UNKNOWN]. מחקר	320

PREFACE

The present book is a revised version of my doctoral thesis, which I presented to the University of Sydney in 2007. As is so often the case with such things, the final product bears little resemblance to the initial goal of my research, which was to study the concept of righteousness in the Hebrew Bible, particularly the צדק word group. What this book does seek to do is to lay the groundwork for such a study.

There are two people whose innovative work made an enormous contribution to the direction of my own thinking. Professor Charles Fillmore, the father of frame semantics, opened my eyes to the richness of the conceptual structures that are evoked by the words we use, and showed me the value of correlating these conceptual structures with the syntactic behaviour of words which evoke that ‘frame.’ This approach to semantic analysis was precisely what I had been looking for. Moreover, it struck me that in order to undertake a semantic study of, for example, the צדק word group—whose meanings are complex and intricately tied to religious beliefs and worldview—something like semantic frames would be essential.

Professor William Croft, as well as winning me over to many of the tenets of cognitive linguistics (in his excellent introduction co-authored with D. Alan Cruse [Croft and Cruse 2004]), transformed my understanding of grammar and syntax with his revolutionary *Radical Construction Grammar* (Croft 2001). I came across his book at a point in which I had run up against some perplexing problems related to identifying the grammatical categories that are inherent (or so I supposed) to biblical Hebrew. Just where could I find the definitive list of parts of speech (noun, verb, etc.) and syntactic slots (subject, direct object, etc.) in biblical Hebrew? How exactly *does* one classify the “particle” אֵת and the phrases that are headed by it? I was frustrated at the lack of consistent descriptions of such things in the literature. Dr. Croft’s deconstruction of commonly held ideas about grammar, along with his “radical” reconstruction, shed much light on these difficulties.

These innovations pushed my own research towards proposing a new methodology for lexical semantics in biblical Hebrew; and with this change of direction, a more modest test case was needed. Professor Ellen van Wolde’s edited volume *Job 28: Cognition in context* (van Wolde 2003c), which emerged from a colloquium of Hebrew and biblical scholars together with cognitive linguists, provided an excellent

conversation partner, and suggested a new object of study: the idea of exploration, focusing on the חִקָּר word group.

I am very grateful for the many people whose generosity, patience, and perseverance have helped me to arrive at this point. In particular, I would like to express my thanks to Associate Professor Ian Young, my doctoral supervisor, who remained flexible, good-natured, and supportive throughout, and Professor van Wolde, for her kind invitation to publish my dissertation in this series. The Church Missionary Society, Australia, allowed me the time necessary to complete this project, and I am ever grateful for the care and concern of their staff, members, and supporters. Special thanks go to my father Geoffrey Shead, who devoted countless hours to proofreading the manuscript and preparing the indexes. I would also like to thank my children Ben, Lachlan, Tristan, and Liliana—three of whom do not yet know life without Dad working on his “big book”—for the many welcome distractions they provided.

This book is dedicated to my wife Rebecca, whose patience and unceasing love have been my constant source of strength.

Soli Deo gloria

ABBREVIATIONS

1. Books of the Hebrew Bible

Gen	Isa	Nah	Ruth
Exod	Jer	Hab	Song
Lev	Ezek	Zeph	Eccl
Num	Hos	Hag	Lam
Deut	Joel	Zech	Esth
Josh	Amos	Mal	Dan
Judg	Obad	Ps/Pss	Ezra
1–2 Sam	Jonah	Job	Neh
1–2 Kgs	Mic	Prov	1–2 Chr

2. General abbreviations

Adv	adverb
BH	biblical Hebrew
BT	Blending Theory
CMT	Cognitive Metaphor Theory
CNI	Constructional Null Instantiation
CR	construction role
CT	construction type
DNI	Definite Null Instantiation
DObj	direct object
dss	Dead Sea Scrolls
ET	English translation
FE	frame element
GF	grammatical function
HB	Hebrew Bible
<i>hi.</i>	BH <i>hip'ıl</i> Verb Stem (<i>binyan</i>); IMT gloss: CAUS
<i>ho.</i>	BH <i>hop'al</i> Verb Stem; IMT gloss: PASS.CAUS
<i>htp.</i>	BH <i>hitpa'el</i> Verb Stem; IMT gloss: REFL
IMT	Interlinear morpheme translation
Inf	infinitive
INI	Indefinite Null Instantiation
IObj	indirect object
LU	lexical unit
LXX	Septuagint
ms(s)	manuscript(s)
MT	Masoretic Text
N	noun
NI	null instantiation
<i>ni.</i>	BH <i>nip'al</i> Verb Stem; IMT gloss: MEDP

NP	noun phrase
Obj	object
<i>pi.</i>	BH <i>pi'el</i> Verb Stem; IMT gloss: INTS
PIBU	primary information-bearing unit
PP	prepositional phrase
PrnSfx	suffixed pronoun
PrnObj	object pronoun (אֵת etc.)
PT	phrase type
<i>pu.</i>	BH <i>pu'al</i> Verb Stem; IMT gloss: PASS.INTS
RCG	Radical Construction Grammar
Sbj	subject
SBL	Society of Biblical Literature
SOA	state of affairs
V	verb
VInfl	verb inflection: indexes a subject referent (akin to a pronoun)
VP	verb phrase

3. Secondary sources

Andersen-Forbes	Andersen, Francis I., and A. Dean Forbes. 2008. <i>The Hebrew Bible: Andersen-Forbes phrase marker analysis (V 0.80 Nov 08)</i> . Bellingham, Wash.: Logos Research Systems, Inc. DVD
BDB	Brown, Francis, S. R. Driver, and Charles A. Briggs. 1907. <i>Hebrew-Aramaic and English lexicon of the Old Testament</i> . Norfolk, Va.: BibleWorks, LLC, 2001. CD-ROM
BHRG	van der Merwe, C. H. J., Jackie A. Naudé, and Jan H. Kroeze. 1997. <i>A biblical Hebrew reference grammar</i> . Biblical Languages: Hebrew 3. Oak Harbor, Wash.: Logos Research Systems, Inc. DVD
BHS	Elliger, Karl, and W. Rudolph, eds. 1983. <i>Biblia Hebraica Stuttgartensia</i> . Stuttgart: Deutsche Bibelgesellschaft
DCH	Clines, David J. A., ed. 1993–. <i>The dictionary of classical Hebrew</i> . Sheffield: Sheffield Academic
GKC	Gesenius, Wilhelm. 1910. <i>Gesenius' Hebrew grammar</i> . Ed. E. Kautzsch and A. E. Cowley. 2nd English ed. Oxford: Clarendon Press. CD-ROM
HALAT	Koehler, Ludwig, and Walter Baumgartner. 1967–1990. <i>Hebräische und aramäische Lexicon zum Alten Testament</i> . 3rd ed. Leiden: E. J. Brill
HALOT	Koehler, Ludwig, and Walter Baumgartner. 1994–2000. <i>The Hebrew and Aramaic lexicon of the Old Testament</i> . 5 vols. Leiden: Brill. CD-ROM
IBHS	Waltke, Bruce K., and M. O'Connor. 1990. <i>An introduction to biblical Hebrew syntax</i> . Winona Lake, Ind.: Eisenbrauns. CD-ROM

- Joüon-Muraoka Joüon, Paul, and Takamitsu Muraoka. 1993. *A grammar of biblical Hebrew*. 2 vols. Subsidia Biblica 14/1–2. Rome: Editrice Pontificio Istituto Biblico
- Liddell-Scott Liddell, Henry George, and Robert Scott. 1889. *An intermediate Greek-English lexicon*. Oak Harbor, Wash.: Logos Research Systems, Inc., 1996. DVD. Also available online at <http://www.perseus.tufts.edu>
- NIDOTTE VanGemenen, Willem A., ed. 1997. *New international dictionary of Old Testament theology and exegesis*. 5 vols. Grand Rapids: Zondervan
- OED Simpson, J. A., and E. S. C. Weiner. 1989. *Oxford English dictionary*. 2nd ed. 20 vols. Oxford: Clarendon Press
- SALSA II The Saarbrücken Lexical Semantics Acquisition project, led by Manfred Pinkal and Anette Frank, and successor to the SALSA project; on the internet at <http://www.coli.uni-saarland.de/projects/salsa/>
- SDBH *Semantic Dictionary of Biblical Hebrew* project, under the auspices of the United Bible Societies and edited by Reinier de Blois (see de Blois and United Bible Societies 2000); on the internet at <http://www.sdbh.org>
- TDOT Botterweck, G. Johannes, Helmer Ringgren, and Heinz-Josef Fabry, eds. 1974–2004. *Theological dictionary of the Old Testament*. Trans. J. T. Willis, D. E. Green and D. W. Scott. 15 vols. Grand Rapids: Eerdmans
- TWOT Harris, R. Laird, Gleason L. Archer, Jr., and Bruce K. Waltke. 1980. *The theological wordbook of the Old Testament*. Chicago: Moody. CD-ROM
- WIVU Werkgroep Informatica, Vrije Universiteit, on the internet at <http://www.th.vu.nl/~wiweb/>; also the annotated Hebrew text database produced by the Werkgroep Informatica under the supervision of Prof. Eep Talstra, and included in the *Stuttgart Electronic Study Bible* (Hardmeier, Talstra, and Groves 2004)

4. Bible translations

- ESV English Standard Version
- HCSB Holman Christian Standard Bible
- NASB New American Standard Bible
- NET The NET Bible. Online: <http://www.netbible.com>
- NIV New International Version
- NRSV New Revised Standard Version

5. Interlinear morpheme translation

For a more comprehensive list of IMT categories, see Croft 2003, xix–xxii, Comrie, Haspelmath, and Balthasar 2008, and (for BH in particular) Anstey 2006b, xvii–xx.

1, 2, 3	first person, second person, third person
ABL	ablative (“from”)
ACT	active
ADD	additive (“also, even”)
ALL	allative (“to”)
ANA	anaphoric deictic
ART	article
CAUS	causative: gloss for BH <i>hip’ıl</i> Verb Stem; PASS.CAUS for <i>hop’al</i>
CERT	certainty marker: gloss for BH <i>qāṭōl</i> Verb form (traditionally ‘Infinitive Absolute’)
CLT	clitic
CMPR	comparative
CNST	construct
CO	coordinator
COM	comitative (“with”)
COND	conditional
DAT	dative
DEM	demonstrative
DEP	dependent verb form: gloss for BH <i>wəqāṭal</i> Verb form (variously called <i>waw</i> -conversive, <i>waw</i> -consecutive, or <i>waw</i> -relative; cf. <i>IBHS</i> §32)
DIST	distal (“then” for TEMP.DIST, “there” for LOC.DIST)
DU	dual
EQT	equative
EXCL	exclamative
EXIST	existential
F	feminine
FRM	formal: gloss for the final morpheme of a BH lengthened imperative (<i>qəṭōl-â</i>)
HORT	hortative: gloss for BH <i>’eqṭēlâ</i> Verb form (traditionally ‘Co-hortative’)
HUM	human
IMP	imperative
IMPF	imperfect(ive)
INF	infinitive
INT	interrogative
INTS	intensive: gloss for BH <i>pi’ēl</i> Verb Stem; PASS.INTS for <i>pu’al</i> , along with related variant Stems
JUSS	jussive
LOC	locative (“in,” “at”)

M	masculine
MEDP	mediopassive: gloss for BH <i>nip'al</i> Verb Stem
NARR	narrative (tense): gloss for BH <i>wayyiqṭōl</i> Verb Conjugation
NEG	negative
NPRF	nonperfective: gloss for BH <i>yiqṭōl</i> Verb Conjugation
NPST	nonpast
OBJ	object
PART	participle
PASS	passive
PFCT	perfect
PL	plural
POSS	possessive
PREP	preposition
PRF	perfective: gloss for BH <i>qāṭal</i> Verb Conjugation
PRN	pronoun
PROX	proximal: “now” = TEMP.PROX, “here” = LOC.PROX; the demonstratives הַ “this,” זֶ “this,” and אֵלֶּה “these” are PROX.MSG, PROX.FSG, and PROX.PL, respectively
PST	past
PTCL	particle
REFL	reflexive: gloss for BH <i>hitpa'el</i> Verb Stem, and related variant Stems
REL	relative clause marker: gloss for BH אֲשֶׁר functioning as a relative clause marker
RPRN	relative pronoun: gloss for BH אֲשֶׁר functioning as a relative pronoun
SBJ	subject
SER	serial adjunct (“again”)
SG	singular
SUBR	subordinator
SUPS	superessive (“upon”)
TEMP	temporal

SYMBOLS

The following symbols are used to represent the relationships between semantic frames.

- [x]—[y] [y] is a more specific elaboration of the more schematic frame [x]
- [x].....[y] [y] is a given perspective on a non-perspectivised scenario [x]
- [x]→[y] [x] and [y] are consecutive subframes in a complex event
- [x]↪[y] [x] is the source and [y] is the target in a metaphor mapping

The following symbols are used in Hebrew examples presented together with an interlinear morpheme translation representation. For more details, see the remarks in chapter 1, along with Croft 2003, Comrie, Haspelmath, and Balthasar 2008, and Anstey 2006b.

In both original language and interlinear morpheme translation:

- x y word boundary between x and y
- x-y morpheme boundary between x and y
- x=y x and y are joined by clisis (in BH, by a *maqṣēp* “

In original language only:

- Ø null expression of meaning

In interlinear morpheme translation only:

- (x) x is not overtly marked in the original (i.e., null expression of meaning)
- x\y y is the internal modification of lexeme x in the original
- x|y y is the modification of an entire morphological/phonological word, including both lexeme and affixed grammatical morphemes
- x:y morpheme boundary between x and y not shown in the original
- x.y x and y are grammatical (sub-)categories of one original language morpheme

HEBREW TRANSLITERATION

Consonants:

א	ʾ	מ ם	<i>m</i>
ב	<i>b</i>	נ ן	<i>n</i>
ג	<i>g</i>	ס	<i>s</i>
ד	<i>d</i>	ע	ʿ
ה הּ	<i>h</i>	פ ף	<i>p</i>
ו	<i>w</i>	צ ץ	<i>ṣ</i>
ז	<i>z</i>	ק	<i>q</i>
ח	<i>ḥ</i>	ר	<i>r</i>
ט	<i>ṭ</i>	ש	<i>ś</i>
י	<i>y</i>	שׁ	<i>š</i>
כ ך	<i>k</i>	ת	<i>t</i>
ל	<i>l</i>		

Vowels:

א	<i>a</i>	י	<i>i</i> (short)
אֵ	<i>ǎ</i>	יֵ	<i>ī</i> (long)
אֶ	<i>aḥ</i>	יִ	<i>î</i>
אָ	<i>ā</i>	ו	<i>o</i>
אֹ	<i>â</i>	וֹ	<i>ō</i>
אֻ	<i>āyw</i>	וּ	<i>ô</i>
עָ	<i>e</i>	וֹ	<i>u</i> (short)
עֵ	<i>ě</i>	וֵ	<i>ū</i> (long)
עֶ	<i>ē</i>	וִ	<i>û</i>
עִ	<i>ê</i>	וֹ	<i>ě</i> (vocal)

CHAPTER ONE

INTRODUCTION

Anyhow, here he is at the bottom, and ready to be introduced to you. Winnie-the-Pooh.

When I first heard his name, I said, just as you are going to say, “But I thought he was a boy?”

“So did I,” said Christopher Robin.

“Then you can’t call him Winnie?”

“I don’t.”

“But you said—”

“He’s Winnie-ther-Pooh. Don’t you know what ‘*ther*’ means?”

“Ah, yes, now I do,” I said quickly; and I hope you do too, because it is all the explanation you are going to get.

—A. A. Milne, *Winnie-the-Pooh*

“There’s glory for you!”

“I don’t know what you mean by ‘glory,’” Alice said.

Humpty Dumpty smiled contemptuously. “Of course you don’t—till I tell you. I meant ‘there’s a nice knock-down argument for you!’”

“But ‘glory’ doesn’t mean ‘a nice knock-down argument,’” Alice objected.

“When *I* use a word,” Humpty Dumpty said, in rather a scornful tone, “it means just what I choose it to mean—neither more nor less.”

“The question is,” said Alice, “whether you *can* make words mean so many different things.”

“The question is,” said Humpty Dumpty, “which is to be master—that’s all.”

—Lewis Carroll, *Through the looking-glass*

1. *The gap*

Lewis Carroll’s humorous and often-quoted exploration of the “public meaning” versus the “private use” of words (*IBHS* §9.4g) raises the question, How *does* a lexicographer—or biblical exegete, or ordinary language-user, for that matter—identify the acceptable limits on the meaning(s) of a word? Any competent language-user will intuitively *recognise* a word’s meanings, along with unacceptable or incongruous

uses; but how does one first *find* and then *describe* those meanings? Is there something more tangible than Christopher Robin's intuition when it comes to the meaning of a word?¹

Thankfully, linguistic semantics has made considerable progress on these questions in the last century. James Barr recognised the importance of general linguistics to the semantics of biblical Hebrew (BH), and he did much to remove grossly random and unsystematic methods of argumentation, in both semantics and philology.² Nevertheless, since then the process of bridging the gap between biblical studies and the insights of linguistic semantics has not proved easy; and while the gross logical abuses of the past are mostly behind us, BH lexicology and lexicography³ is too often seriously flawed.⁴

There are, no doubt, many reasons for the persistence of the gap. For a start, many biblical exegetes approach the text from the theological side, and then find themselves thinking about the 'meaning' of the text and particular words, without necessarily having a solid linguistic background. Indeed, linguistics and theology are vast disciplines, and mastering both is a daunting prospect. Further problems for bridging the gap come from the fact that biblical Hebrew is an ancient language with a limited corpus.⁵ Many linguistic theories and

¹ One advantage we have over Christopher Robin's dialogue partner is that, in this study, the focus is on full word-forms, rather than an empty word-form like *the(r)*. The 'meaning' of empty word-forms is notoriously difficult to describe (cf. Lyons 1995, 65).

² E.g. Barr 1961, 1962, 1968.

³ *Lexicography* refers to "the art or practice of writing dictionaries," while *lexicology* is "that branch of knowledge which treats of words, their form, history, and meaning" (*OED*; cf. van der Merwe 2004, 119 n. 2). While there is a great deal of overlap between them, lexicology is properly a subdiscipline of linguistic semantics, whereas lexicography also concerns itself with pragmatic issues that are not necessarily within the scope of lexicology. I also use the term 'lexical semantics' as an alternative to 'lexicology.'

⁴ In terms of New Testament Greek lexicography, see John Lee's sensitive historical critique, and particularly his analysis of the flaws in different editions of Bauer's famous lexicon (Lee 2003). Recent surveys and critiques of the state of BH lexicography will be listed in ch. 11.

⁵ In the case of BH, the term 'ancient language' is preferable to 'dead language,' given the continuous study and use of the language throughout the centuries. Nevertheless, in terms of linguistic analysis it is important to distinguish BH from modern languages, for which we may consult living speakers who are contemporaries of the form of the language under investigation. With BH, as with any ancient form of a language, we are at a considerable disadvantage.

methods focus on modern languages, and can base their empirical studies on the intuitive judgments of native speakers. For example, D. Alan Cruse's well-regarded analyses of lexical semantics rely heavily on assessments of the relative normality or oddness of particular (often contrived) statements.⁶ Such judgments are not possible in the case of BH, or at least not with the same level of certainty. Part of the task in applying modern linguistic insights, therefore, is either selecting some which are already applicable to the study of ancient languages, or adapting others so as to make them applicable.

2. *Bridging the gap*

In this study, I will propose and demonstrate a method for lexical semantic analysis of BH, based on a number of recent linguistic theories, which if applied more widely would, I believe, contribute towards the ongoing task of bridging the gap. The method concerns both grammar and semantics—indeed, at its heart it is about the relationship between grammar, particularly syntax, and semantics, and how the exploration of this relationship can assist in our understanding of words.

There are three major influences on my method.⁷ The first is structural semantics, which is widely known and used in the study of BH, and is largely applicable without modification. The second is cognitive semantics, which is not necessarily easily applicable to an ancient language—but I believe it is indispensable to a theoretically rigorous approach. Within cognitive semantics, we will encounter a number of branches, foremost among which are Frame Semantics, as developed by Charles J. Fillmore (1982), cognitive metaphors and blending theory, and the 'dynamic construal' approach to meaning and categorisation, particularly as expounded by D. Alan Cruse and William Croft (2004).⁸ The third influence is the range of approaches to grammar known as construction grammar(s), and especially Croft's theory of Radical Construction Grammar (Croft 2001).

⁶ E.g. Cruse 1986, 2004; Croft and Cruse 2004.

⁷ Only a minimum of references are given in this chapter; more will be provided when the topics are treated in depth.

⁸ In fact, the section on 'dynamic construal' in Croft and Cruse 2004 was contributed by Cruse, as the book's preface makes clear.

Indeed, Croft provided the inspiration for the title of this book, by coining the term ‘Radical Frame Semantics’ (2001, 62; 2005, 287). He uses the term to describe Fillmore’s Frame Semantics, which Croft sees as the semantic correlate to his own Radical Construction Grammar. In this, I agree with Croft; however, as we will see in chapter 7, I use ‘Radical Frame Semantics’ in an expanded sense, to denote the *integration* of Fillmore’s semantic model and Croft’s grammatical model.

3. Goals of the study

This study has four goals.

First, I aim to present and summarise the linguistic approaches mentioned above, in an accessible and straightforward way, for the benefit of biblical scholars. Some of these theories have only recently begun to find their way into biblical studies, while some have never been applied there; indeed, some of the ideas are only in early stages of discussion in general linguistics.

Second, I hope to offer some small contributions to the ongoing formulation of cognitive linguistic theories and their application—in particular, to Frame Semantics and its practical application in lexicology and lexicography, and to the integration of Frame Semantics and construction grammar.

Third, I will discuss some of the issues, both theoretical and practical, which need to be addressed in applying these theories to BH lexicology. Some of the practical issues pertain to the development of software for lexical semantic analysis of the text of the Hebrew Bible (HB). As part of the investigation of these issues, and to demonstrate some of the possibilities afforded by the method, I developed a prototype for a database and client software application.

Finally, I will sketch out what such an application might look like by means of a case study. The study focuses on the group of BH words related to the root חקר, along with some close semantic neighbours; but this study is undertaken in the context of a broader cognitive analysis of the concepts “explore,” “search,” and “seek.”

In many ways, this study is merely a beginning, a suggestion for future development. My hope is that, as these ideas are developed and refined in general linguistics, so they will be applied further in BH lexicology, and thus the beginning will become something more.

4. *Outline*

The study is divided into three parts.

Part One is devoted to the first goal above. In chapters 2 and 3, I provide a broad outline of some key aspects of both structural semantics and cognitive semantics. Chapter 4 shifts to the grammatical side of linguistic analysis, with an overview of Radical Construction Grammar. Chapter 5 returns to cognitive semantics, but focuses on Fillmore's Frame Semantics, along with the FrameNet lexicography project, on which my own practical application is largely based.

Part Two covers the second of the goals. Most of this section is devoted to critiquing aspects of Frame Semantics, and suggesting possible enhancements and extensions. Broadly speaking, chapter 6 deals with semantic questions, and chapter 7 with grammar, and particularly with the syntax-semantics interface and the integration of Frame Semantics with Radical Construction Grammar.⁹

Part Three moves on to the semantics of BH in particular, and covers the third and fourth goals. Thus, after considering *how* to apply the theoretical basis to BH, I apply my method in a highly focused study, and compare the results with some of the standard lexica.

5. *Conventions and terminology*

I use *italics* for expressions, word forms, lexemes, and lexical units; and “double quotes” for the meaning of an expression, or a translation for a Hebrew expression. However, in the context of cognitive semantic analysis, I use SMALL CAPITALS for conceptual structures and entities; there is little difference between this and a “meaning,” apart from one's theoretical perspective. There is one exception to the SMALL CAPITALS convention for concepts: since ‘frames’ and ‘frame elements’ are both types of conceptual structure, from chapter 5 onwards I differentiate between them by enclosing the name of a frame in square brackets, as in [FRAME NAME].¹⁰

⁹ In Parts I and II, most of the explanatory examples are in English, both for the sake of familiarity and because these chapters deal mostly with general linguistics rather than BH or ancient languages in particular.

¹⁰ This follows Ungerer and Schmid 1996, but differs from the Frame Semantics literature.

Important terminology is introduced in **bold type**, emphasis is marked with *italics*, and other terms under consideration are placed in ‘single quotes.’ Malformed constructions (whether syntactic or semantic oddness) are indicated by *, as in **He talked the cat*, and questionable constructions are indicated by ?.

Most linguistic terminology will be defined when it is introduced in the argument. I use the term ‘semantics’ in a broad sense, incorporating what was previously segmented into ‘semantics’ and ‘pragmatics.’¹¹ Unless otherwise indicated, I will use the terms ‘aspect’ and ‘aspectual distinction’ (the former being a strictly formal category) in the sense “grammatical aspect,” like the German *Aspekt* (way of viewing a process: perfective, progressive, habitual, etc.), rather than “lexical aspect” or *Aktionsart* (inherent properties of a situation or event: causative, stative, etc.).¹² For the most part, I follow Waltke and O’Connor’s system of the BH Verb Conjugations, particularly their view that *qāṭal* and *yiqṭōl* “are opposed as perfective . . . and nonperfective” (*IBHS* §30.1a).

I will follow the convention of capitalising the labels for language-specific categories and constructions, whereas apparently universal categories, or “cross-linguistically valid semantic, pragmatic and discourse-functional categories,” are in lower case (Croft 2001, 51).¹³ Thus, ‘Subject’ in the context of English grammar refers to an English Subject relation/role (for example, the Subject role in an English Transitive Verb Clause), and ‘Noun’ to an English part-of-speech category. Conversely, ‘noun’ would denote either a supposed universal grammatical category or a typologically valid underlying concept.

6. Interlinear morpheme translation

For many of the examples quoted from the HB, I have used the interlinear morpheme translation (IMT) system which has become the standard in linguistic typology. This system makes linguistic analysis presented for any language accessible to the wider community of lin-

¹¹ Cf. Lyons 1995, xi; Dancygier and Sweetser 2005, 10.

¹² See *IBHS* §20.2 for a concise description of the distinction. Bernard Comrie (1976, 6–7) calls *Aktionsart* “inherent meaning.”

¹³ Croft (2001, 12) attributes the convention to Comrie 1976 and Bybee 1985; cf. also Anstey 2006a, 60.

guistics scholars, allowing linguistic research to be based on the broadest possible base of languages.¹⁴

The following example shows how Genesis 1:1 could be presented using IMT:¹⁵

- (1) בְּרֵאשִׁית בָּרָא אֱלֹהִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ:
bě-rē'š-ît bārā' 'ēlōhīm
 LOC-beginning-FSG¹⁶ create(3MSG.PRF) God
'ēt haš-šām-ayim wě-'ēt hā-'āreš
 OBJ ART-heaven-DU CO-OBJ ART-land(FSG)
 "In the beginning God created the heavens and the earth" (Gen 1:1)

This example shows the four components of the IMT presentation used in this book: (i) the Hebrew text unaltered; (ii) a transliterated form of the Hebrew text, with hyphens used to separate morphemes; (iii) an IMT rendering of the transliterated text, with word-to-word alignment; and (iv) a typical translation of the Hebrew into English.

For the most part, I have followed Anstey's adaptation of IMT for representing BH.¹⁷ Some aspects of this adaptation are worthy of note.

I have adopted Anstey's proposal for adding an extra IMT symbol to cater for BH substantives in Construct state, since the Construct "is signaled by changes to the entire phonological word and not just the stem" (Anstey 2006a, 61); thus, the Absolute state *pē'-â* is glossed 'corner-FSG,' but Construct *pē'-at* is glossed 'corner-FSG|CNST'.¹⁸ In fact, this is not strictly necessary according to the Leipzig Glossing Rules (Comrie, Haspelmath, and Balthasar 2008). As the examples in

¹⁴ For an explanation of IMT, see the literature (Croft 2003, xix-xxii; Comrie, Haspelmath, and Balthasar 2008; and for BH, Anstey 2006b, xvii-xx).

¹⁵ There is considerable flexibility in the IMT format. Two examples will suffice. First, the final lexeme in the example could instead be represented with an overt null element in the transliteration (*'āreš-Ø*) with a corresponding IMT element (land-FSG; Comrie, Haspelmath, and Balthasar 2008, Rule 6). Second, metalanguage words are often acceptable in place of grammatical category labels; thus, we could use 'in,' 'the,' and 'and' in place of 'LOC,' 'ART,' and 'CO,' respectively (Rule 3).

¹⁶ If בְּרֵאשִׁית is taken to be a Construct form, then the IMT gloss here would be 'beginning-FSG|CNST' (see below).

¹⁷ Although Anstey 2006a lays out his system in detail, since the appearance of this article Anstey has made many changes to his IMT system (pers. comm.), which will no doubt be published in due course. Some of these changes are noted below.

¹⁸ In Anstey 2006a, he used a double backslash ("\\") for this purpose; however, in a personal communication he has indicated that, for space efficiency, he now uses a vertical line ("|") instead.

Rule 4 show, *each morpheme* may be marked as CNST; thus, *pě'-at* would be glossed 'corner\CNST-FSG.CNST.'¹⁹ Nevertheless, for both clarity and brevity, Anstey's method is preferable in cases of word-level changes.

With Anstey, I gloss the BH *pi'el* Verb Stem (*binyan*) as Intensive (INTS), and the *pu'al* as Passive Intensive (PASS.INTS). If Waltke and O'Connor's theory of the *pi'el* and *pu'al* were adopted, these would be glossed as Resultative (RES) and Passive Resultative (PASS.RES) respectively (cf. *IBHS* §21, §24).

Finally, following Anstey's recommendations (2006a, 72–78), the highly fused prepositions listed in table 1.1 are glossed with grammatical IMT categories rather than prototypical translations.

Table 1.1 IMT categories for highly fused prepositions

Preposition	IMT category	Abbreviation
ב	Locative	LOC
ל	Dative	DAT
ע	Equative	EQT
מן	Ablative ("from")	ABL
אל	Allative ("to")	ALL
את	Accusative	ACC
על	Superessive ("upon")	SUPS
עם	Comitative ("with")	COM

Apart from minor changes to grammatical category labels, the ways in which my system differs from Anstey's are as follows:²⁰

1. I have used a traditional transliteration scheme for BH, despite his recommendation of adopting the International Phonetic Alphabet (IPA). As well as being more accessible to students of BH, I believe that the traditional scheme is perfectly adequate for the vast majority of uses, even with respect to broader linguistic typology.

¹⁹ The relevant example in the Leipzig Glossing Rules is the German Dative Plural form *Väter-n*, whose IMT rendering is either 'father.PL-DAT.PL' (Rule 4) or 'father\PL-DAT.PL' (Rule 4D).

²⁰ Some of the differences are illustrated by example (1) above: compare the IMT representation of Genesis 1:1 in Anstey 2006a, 60.

2. Again following Waltke and O'Connor (*IBHS* §29–31), I use the labels Perfective and Non-perfective (PRF, NPRF) to differentiate the BH *qāṭal* and *yiqṭōl* Verb ‘Conjugations’ from one another, rather than Past (PST) and Non-past (NPST).

3. I gloss the BH Participle as such (PART), rather than as Progressive (PROG).

4. In Anstey 2006a, Anstey glossed the geminated *-aμ-* inside the BH *w-ay-y-iqṭōl* Verb form as a Clitic element (CLT) with unknown function,²¹ though more recently (pers. comm.) he has changed the gloss for *-aμ-* to NARR, since this is the distinguishing feature of a Narrative Verb. However, I am not convinced that the *-aμ-* had any function at all independent of the *w* by the time of BH, in which case dividing *waμ-* is unnecessarily complex. I gloss undivided *waμ-* as a Coordinator (CO) and Narrative Verb indicator (NARR). Thus, *way-yiqṭōl* consists of three morphemes, *way-y-iqṭōl*, with the corresponding IMT gloss ‘CO.NARR-3MSG-kill.’

5. I do not mark the prosodic information represented by the conjunctive and disjunctive accents in the Masoretic Text, though I do gloss *maqṣeph* as a clisis (‘=’).

6. Where there are differences between Anstey’s glosses and those in Croft 2003, I have followed the latter.²²

With all these glosses, it must be stressed that they are not intended to give a precise rendering of the sense of any given instance of a word/morpheme/form; rather, they conform, in my view, to its *prototypical* force.

As implied above, I have not used IMT for all Hebrew examples. For in-text citations, I usually use the Hebrew text (not transliterated) followed by an English translation (ET). In some instances, I have used transliterated Hebrew in the main text—namely, in those cases where the text makes reference to a specific part of an IMT representation, and the reference would not be easy to identify for a non-Hebraist if it were in Hebrew square script.

²¹ The *μ* in *-aμ-* is the standard abbreviation for *mora*, or unit of sound. According to Anstey (2006a: 60), *μ* is “the proper analysis for gemination.”

²² E.g. CO rather than CR for coordinator; SUBR rather than SR for subordinator.

PART ONE

FOUNDATIONS FOR LEXICAL SEMANTICS

CHAPTER TWO

STRUCTURAL SEMANTICS AND SEMANTIC FIELDS

1. *Sense relations*

One of the most important concepts in modern linguistic semantics for addressing the questions of lexical meaning, arising particularly from structural approaches to semantics,¹ is that of **sense relations**.² The key principle here is that the sense of any expression is bound up with the way it relates to other expressions in the language—that is, with its sense relations. Indeed, Lyons defines the ‘sense’ of a lexeme as “the set, or network, of sense-relations that hold between it and other expressions of the same language” (Lyons 1995, 80).³

¹ Cf. Lyons 1995, 102–30; Matthews 2001, 118–41. For a long time, ‘structural linguistics’ was associated in the United States with Bloomfieldian versions of structuralism, which paid little or no attention to semantics, or with Chomskyan generative grammar. The kind of structural *semantics* I describe here is descended from the structural approach of anthropological linguists in the 1950s, particularly Edward Sapir (cf. Lyons 1995, 105–6). The concepts associated with this kind of structural semantic theory can be used (and have been used widely in biblical studies) without necessarily subscribing to a particular variety of structural *linguistics*. On the much more complex issue of structural linguistics, see for example Matthews 2001.

² The literature on this topic is extensive, and only a few works are mentioned here. Lyons 1977, 230–335 and Cruse 1986 are standard treatments, while Cruse 2004 incorporates many insights from cognitive linguistics. For helpful introductions, see Lyons’ more concise and updated volume (1995, 102–30); Saeed 1997; Löbner 2002. In biblical studies, see Berlin 1985; introduction to Muraoka 1998; Aitken 2003.

³ Cf. Lyons 1977, 174, 197–206, esp. 204. While a strict structuralist view holds that a description of sense relations *exhausts* the description of meaning, this is not the majority view (Löbner 2002, 85). Along with intra-lingual ‘sense,’ any relationship that a word has with the ‘real’ (extra-lingual) world is also an aspect of its meaning. Lyons identifies two kinds of extra-lingual relationship. The *denotation* of an expression is its correspondence with classes of entities in the external world; while the *reference* of a referring expression is its identification of a particular extra-lingual entity (Lyons 1995, 78–79). Thus, *dog* denotes all (and only) those entities in the world that are correctly called dogs; while the referring expressions *Fido* and *my dog* refer to some particular dog. Importantly, denotation is invariable and utterance-independent, whereas reference is variable and utterance- or context-dependent (Lyons 1995, 79). In chapter 3 §5 we will consider ‘sense’ from a cognitive (rather than structuralist) viewpoint, and an alternative to both the intra-lingual and the real-world approaches to meaning.

There are two major types of sense-relation, corresponding with the two basic levels at which expressions relate semantically to one another: **paradigmatic** and **syntagmatic** (also known as substitutational and combinatorial).⁴

Paradigmatic relations, such as synonymy and hyponymy, concern the similarities and differences in meaning between words or expressions that can be substituted for one another in a sentence. For example, there is clearly some sort of opposition relation between צַדִּיק “righteous” and רָשָׁע “wicked”—or, more accurately, between a sense of צַדִּיק and a sense of רָשָׁע. In Cruse’s terminology, paradigmatic relations hold primarily between **lexical units** (LUs) rather than lexemes, where a LU is “the union of a single sense with a lexical form” (Cruse 1986, 80). If a pair of terms is related paradigmatically, they will share some common semantic element, while contrasting in some other aspect (de Blois and United Bible Societies 2000, 4).⁵

Syntagmatic relations exist between the constituents in a ‘syntagm’ or multiple-word complex (a phrase or sentence). They “consist of the way in which the meanings of the constituents are combined to yield the meaning of the whole syntagm” (Löbner 2002, 131).

At this point, we should note that cognitive linguists have challenged the common conception of sense relations as *direct* relations between expressions. They object, with good reason, that words are not related directly to one another; rather, they are related to conceptual structures in the mind, and to one another only via these. We will return to this in due course. First, we will take a more detailed look at paradigmatic and syntagmatic relations, from a more traditional structural viewpoint.

2. Paradigmatic relations

Paradigmatic sense relations are essentially about the similarities and differences in meaning between two or more words.⁶ At a practical

⁴ These are not necessarily the only types of sense relation; for example, see the comments below on morphological (or root) relationships. However, they are by far the most widely treated in the literature.

⁵ If two words are absolute synonyms, there will be no element of semantic contrast, at any level of ‘meaning’; however, absolute synonyms are at best extremely rare, and more probably non-existent (cf. Cruse 1986, 270; Lyons 1995, 60–65).

⁶ This definition may appear somewhat circular; but see Cruse 1986, 84.

level, they illuminate why a particular word was included in a sentence, rather than another word; or how a different choice at a particular point would alter the meaning of the sentence. These relations are clearly fundamental to understanding the sense of a term. Indeed, Barr suggests that “the real meaning of a word has to be expressed paradigmatically, that is, in terms of the difference that it makes to choose this word rather than some other word, in a related field, that might have been in the same place” (Barr 1992, 144).⁷

There are many paradigmatic relations which are particular to certain areas of language or experience, and cannot be generalised. For instance, Cruse notes that the relations between *see*, *look at* and *watch* are paralleled, to a certain extent, in the lexemes used for other modes of perception (e.g., *hear* vs. *listen to*), but are not generalisable beyond the experiential domains of perception (Cruse 1986, 84–85).

However, there are a number of more abstract paradigmatic relations which are not idiosyncratic, and recur more generally through languages. A number of these are fairly intuitive and well-defined, and have been carefully studied.⁸ The major categories are briefly explained below.⁹

2.1. *Hyponymy*

Hyponymy can be viewed as a relationship of class inclusion: if a lexeme (or expression) X is a hyponym of another lexeme (or expression) Y, then the class of X is a subset of the class of Y. Conversely, Y is in this case called a superordinate, or hyperonym, of X. Hyponymy can also be expressed in terms of meaning inclusion: the meaning of X (the more specific term) includes the meaning of Y (the more general term). For example, *dog* is a hyponym of *animal*, since (i) the

⁷ The notion of difference or opposition is crucial in semiotics at the broadest level; cf. Eco 1984, 23–24.

⁸ See in particular the thorough studies by Cruse (1986, 2004), as well as his recent reappraisal from a cognitive perspective (Croft and Cruse 2004). See also Lyons 1977, 1995; Löbner 2002; Nida and Louw 1992.

⁹ Nida and Louw use different terminology for similar relations to those which are described below, namely, a ‘cluster’ for a group of near-synonyms or close compatibles (none of which is a hyponym of any other), an ‘included set’ for a vertical chain in a taxonomic hierarchy (such as *animal-dog-collie*), an ‘overlapping set’ for very close near-synonyms (though the difference between this and a cluster is not clear to me), and a ‘complementary pair’ for various types of opposition (Nida and Louw 1992, 84–86).

class of dogs is a subset of the class of animals, and (ii) the meaning of *dog* includes the meaning of the more general *animal*.¹⁰

Although hyponymy works most intuitively for nouns, it also applies to other parts of speech. *Murder* is a hyponym of *kill*, and *maroon* is a hyponym of *red*. The hyponymic relation is most typically expressed in *X is Y* sentences: *a dog is an animal*; *to murder is to kill*; *maroon is (a variety of) red*.¹¹

In the HB, paired adjectives, particularly those with ethical connotations (where both terms have the same polarity), sometimes consist of a general (superordinate) term and a hyponym. For example, טוֹב “good” in an ethical sense is paired with נָכוֹן “straight, right” (2 Sam 15:3), יָשָׁר “right, just” (Ps 25:8), and סֵלַח “ready to forgive” (86:5); and טוב in a non-ethical sense is paired with רַךְ “tender” (Gen 18:7), בָּרִיא “fat” (Gen 41:5), and שָׁמֵן “fat” (1 Chr 4:40). All these could be taken as hyponyms of the relevant sense of טוב.

Hyponymy has a more specific sub-type called taxonomy. Taxonomy is, roughly speaking, a ‘kind-of’ relationship, as in *a duck is a kind of bird*. Both natural kinds and non-natural, or cultural, kinds tend to form complex tree-structured taxonomies.

2.2. Meronymy

Meronymy is the ‘part-whole’ relation, as in *a nose is part of a face*.¹² Many physical real-world entities participate in complex tree-structured meronomies.

2.3. Synonymy

Synonymy, or identity of meaning, can be viewed as symmetrical or reciprocal hyponymy. As with all common sense relations, however, there are different degrees of synonymy. At one end of the scale is

¹⁰ These two ways of describing hyponymy deal with denotation and intension, respectively. Some definitions of hyponymy are based on the notion of entailment; however, most simple definitions or test schemas will either allow false cases of hyponymy, or exclude valid cases. (Entailment also works only with descriptive or propositional meaning.) The intuitive definitions given above, which utilise the spatial *container* ‘image schema,’ are easier to manage (cf. Croft and Cruse 2004, 142).

¹¹ This is not a sufficient diagnostic text of hyponymy, however. See Cruse 1986, 88–89 for a careful diagnostic test schema.

¹² Cruse distinguishes between ‘part’ and ‘piece,’ both of which are hyponyms of ‘portion’ (Croft and Cruse 2004, 151–53).

absolute synonymy. Lyons gives three conditions for two words (or expressions) to be absolutely synonymous (Lyons 1995, 61):

1. All their meanings must be identical. That is, polysemous words must be equivalent semantically in every sense.¹³
2. They must be synonymous in all contexts. This is a highly restrictive condition, because it means the two expressions must have the same collocational patterns. For example, although *a big mistake* and *a large mistake* are both grammatical and meaningful, and use *big* and *large* with the same (lexical) meaning, the second phrase is “collocationally unacceptable or unidiomatic” (Lyons 1995, 62).
3. They must be semantically equivalent on all dimensions of meaning, both descriptive (propositional) and non-descriptive. Many examples of near-synonymy have quite different expressive content: for example, *gigantic* versus *very big*, *stingy* versus *economical*, *infant* versus *baby*, *very* versus *jolly*. As Lyons remarks, “knowing the expressive (or socio-expressive) meaning of a lexeme is just as much part of one’s competence in a language as knowing its descriptive meaning” (1995, 65).

Given the strictness of this definition, absolute synonymy in a natural language is at best extremely rare. Indeed, absolute synonyms would be an inefficient redundancy for a natural language; and one term would tend either to undergo a semantic shift, or to fall out of common use (and thus become archaic—affecting its non-descriptive meaning).

Most detailed accounts of synonymy focus on descriptive, or cognitive, synonymy. Even at a purely descriptive level, however, near-synonymy—where two or more expressions are more or less similar in meaning—is much more common than true descriptive synonymy.¹⁴ It is also much more difficult to describe or predict. Cruse notes that near-synonyms “must not only manifest a high degree of semantic overlap, they must also have a low degree of semantic contrast” (Cruse 1986, 266)—which is why *spaniel* and *alsatian* are not even faintly synonymous. Cruse distinguishes between ‘central’ se-

¹³ If sense relations are held to apply to individual senses (LUs) rather than lexemes, then this condition will be omitted.

¹⁴ The term ‘near-synonym’ is used by Lyons (Lyons 1995, 60), while Cruse uses ‘plesionyms’ (Cruse 1986, 285).

mantic traits of a word and more ‘peripheral’ or ‘minor’ traits;¹⁵ and he argues that near-synonyms are identical with respect to central semantic traits, and differ (if at all) only with respect to minor traits.

However, *spaniel* and *alsatian* seem to share precisely the same central trait (i.e., DOG). The reason they are non-synonymous is because they are part of a division of this concept into mutually exclusive sub-concepts. Thus, near-synonyms would be better described as compatibles (see below) with a high degree of semantic overlap, particularly in ‘central’ traits.

2.4. Compatibility

In intuitive terms, compatibility is the semantic overlap of two terms which independently specify a common, more general concept. Adapting Cruse’s definition (1986, 92), we may view compatibility as a relation for which two conditions must hold true. First, the meanings of the two lexemes or expressions must be independent of one another—that is, the meaning of one must not be wholly contained in the meaning of the other, and neither one may exclude or contradict the other.¹⁶ Secondly, a pair of compatibles must have a common non-trivial superordinate.¹⁷

Lists of moral characteristics (of the same polarity), such as *kind*, *honest*, and *loyal*, will often contain compatibles: they are semantically independent, and are all (arguably) hyponyms of *good* (in the moral sense). In fact, such a list may consist of a combination of compatibles, near-synonyms, and hyponyms/superordinates (e.g., *good*, *kind*, *helpful*, and *honest*).

¹⁵ He later refines this as a distinction between ‘capital’ semantic traits and ‘subordinate’ traits (Cruse 1986, 287). Capital traits are analogous to the head in a syntactic head-modifier construction (e.g., *hat* in *a red hat*), while subordinate traits are analogous to the modifier (e.g., *red* in *a red hat*).

¹⁶ This is a more general statement of the first condition than Cruse’s, which is restricted to truth-conditions or descriptive meaning.

¹⁷ Compatibility could be defined more broadly, with the first condition alone. However, Cruse notes that the second condition restricts ‘compatibility’ to the interesting cases—those where a real relationship is apparent. For example, *heavy* and *impressive* fulfil the first condition (and are in that sense compatible), but are not in any way conceptually related. On the other hand, *husband* and *policeman*, while being independent of one another, are also co-hyponyms of *human male*, and thus have non-trivial shared semantic content. *Policeman* and *lawyer* are more closely related compatibles.

2.5. Incompatibility and opposition

Incompatibility is a relationship of mutual exclusion between the meanings of two words or expressions. Incompatibility primarily applies to descriptive meaning (or truth-conditions), and is usually defined in terms of logical entailment. Thus, *X* and *Y* are incompatibles if a sentence of the form *A is f(X)* can be found which entails a parallel sentence of the form *A is not f(Y)*, and vice versa.¹⁸ For example, *It's a cat* entails *It's not a dog*.

As with compatibility, incompatibility is only informative or interesting when the terms have a common non-trivial superordinate—that is, when they have a significant degree of semantic overlap. *Husband* is incompatible with *planet*; but the incompatibility (in a semantic sense!) of *husband* and *wife* is much more significant.

Incompatibility can hold between sets of more than two expressions, in which case it is sometimes called *heteronymy*.¹⁹ However, there are a number of kinds of incompatibility which hold between two lexemes or expressions—where, moreover, the fact that there are two, and only two, items in the relationship is in some way inherent to the concept. Inherently binary incompatibility is called *opposition*.²⁰ The most significant semantic oppositions are complementarity, antonymy, reversives, and converses.

1. *Complementarity*. A complementary pair of terms is one which exhaustively divides some conceptual domain into two disjoint sub-

¹⁸ Cf. Cruse 1986, 93–94. The “and vice versa” is not strictly necessary; that is, if *X* entails *not Y*, then *Y* automatically entails *not X*.

¹⁹ Cf. Löbner 2002, 91–92—although Löbner’s inclusion of heteronymy under types of oppositions is inaccurate (see below). Heteronymy is evident in taxonomic hierarchies, which are structured vertically by taxonomic hyponymy (the ‘kind-of’ relation), and horizontally by the relationship of incompatibility between co-taxonyms. Thus, the sub-kinds of *animal* are mutually incompatible (*dog*, *cat*, *horse*, *elephant*, and so on).

²⁰ While Cruse’s definition of incompatibility logically includes opposition, he usually uses the term ‘incompatibility’ to refer to “contrasts which are not inherently binary” (i.e., not oppositions) (Cruse 1986, 109 n. 8). I will follow Lyons in using ‘incompatibility’ in a more inclusive way, with various types of oppositions as special cases of incompatibility (cf. Lyons 1995, 128). Note also that the terminology varies in different treatments: for example, Crystal (1997, 105) uses ‘antonymy’ to denote opposition in general, and sub-divides this into gradable antonyms, nongradable antonyms and converse terms (equivalent, respectively, to my antonyms, complementary pairs, and converses). Hurford (1992, 407) uses the term ‘binary exclusivity’ for my complementarity.

domains, so anything within that domain must fall into one, and only one, of the subdomains.²¹ In truth-conditional terms, there is an extra entailment relationship: if X and Y are complementaries, not only does A is $f(X)$ entail A is not $f(Y)$ (and vice versa), but A is not $f(X)$ entails A is $f(Y)$ (and vice versa). Examples include *dead:alive*, *open:shut*, *even:odd*, and *girl:boy*.

2. *Antonymy*. Antonyms are gradable opposites, such as *fast:slow*, *long:short*, *good:bad*, and *hot:cold*. Cruse defines antonyms by three properties (Croft and Cruse 2004, 169):

- (i) They are adjectives or stative verbs
- (ii) They denote properties construed as varying in degree
- (iii) They are counterdirectional in that one term when intensified denotes a higher value of the relevant property, while the other term when intensified denotes a lower value.

There are two major types of antonyms: those that involve a single underlying property scale (a monoscalar system), and those that involve two separate scales working in tandem (a biscalar system).

A typical example of antonyms based on a monoscalar system is *long:short*, with the underlying property scale LENGTH. This is represented in figure 2.1.

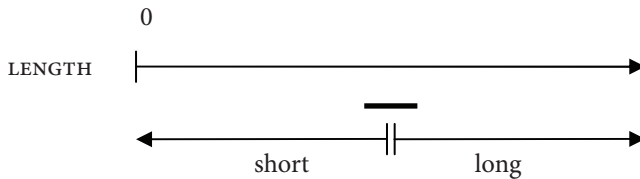


Figure 2.1 The *long:short* scale. Adapted by permission from Croft and Cruse 2004, 173, fig. 7.5, © William Croft, D. Alan Cruse.

There is one conceptual scale in operation, namely, that of LENGTH (the top arrow). However, there are two possible ways of construing the length of something: (i) in absolute terms, directly against the scale (e.g., *1.5m long/in length*), or (ii) relative to a possibly vague reference value, denoted in the diagram by the solid bar, using the polar antonym terms (e.g., *a long pencil*, *a short branch*). The relative

²¹ Cf. Cruse 1986, 198–99; Lyons 1995, 128; Croft and Cruse 2004, 166.

terms (i.e., the antonyms) have opposite relationships with respect to the absolute scale: one indicates more of the scaled property, the other less.

Biscalar systems involve two scales. Each scale is associated with one of the relative terms, and each relative term indicates more of its associated property. Thus, *hot* indicates more HOTNESS, and *cold* indicates more COLDNESS, as in figure 2.2.

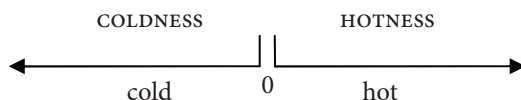


Figure 2.2 The *cold:hot* scale. Reproduced by permission from Croft and Cruse 2004, 170, fig. 7.2, © William Croft, D. Alan Cruse.

Other examples of antonyms involving biscalar systems are *hard:soft* and *good:bad*.²²

Both antonyms and complementaries have to do with perceived properties. The distinctive aspect of antonymy is that it views a property as gradable, and related to some conceptual scale: hence, one can have more or less of the property. Complementaries, on the other hand, view a property as being either present or absent, true or not true. Consequently, when used in a normal construal of their conceptual domain, complementaries cannot be simultaneously denied. To declare that a number is *neither even nor odd* is paradoxical. In contrast, to say that something is *neither hot nor cold* is perfectly acceptable. Moreover, antonyms lend themselves to intensives (*very long*, *not very long*), as well as comparative and superlative expressions (*longer*, *longest*).

²² Biscalar systems seem to cast some doubt on Cruse's first property of antonyms, that is, that they are adjectives or stative verbs. This may be too restrictive. In the case of polar antonyms based on a biscalar system, the pair of underlying scales may be lexicalised in terms of nouns. What is the relationship between these nouns, if not antonymy? If *hard:soft* and *hot:cold* are antonymous pairs, what of *hardness:softness* and *heat:coldness*? Intuitively, these seem to be 'opposites' of the same kind as their adjectival counterparts. This secondary relation is particularly relevant to BH, where Nouns are commonly used adjectivally. For instance, if רָשָׁע and צַדִּיק are antonyms, then there may be an analogous relation between the Nouns צִדְקָה/צִדִּיק and רָשָׁע/רָשָׁעָה (cf. Deut 9:4, 5; Job 35:8; Prov 10:2; 11:5; 13:6; 16:12; Ezek 18:20; 33:12).

3. *Reversives*. Reversives are “verbs that denote changes in opposite directions between two states” (Croft and Cruse 2004, 166). These include *rise:fall*, *dress:undress*, and *enter:leave*. The states need not be absolutely defined; the difference between the two states may only be relative, as in *lengthen:shorten*, *accelerate:decelerate*, and *strengthen:weaken*.

Many reversives are related to (and probably conceptually based on) either a pair of complementaries or a pair of antonyms, which denote the states at either end of the reversal.

4. *Converses*. So-called converses are two expressions which “express the same relation with reversed roles” (Löbner 2002, 92). As is apparent from this definition, this relation only pertains to relational expressions—those whose meaning involves two or more elements. Examples of converses are *buy:sell*, *parent:child*, *above:below*, and *borrow:lend*.²³

The above descriptions of general paradigmatic relations deal mainly with the *descriptive* component of meaning. Meaning is more than descriptive or truth-conditional content, however; and in analysing sense relations, non-descriptive aspects must also be taken into account. For example, the differences between *father*, *dad*, and *daddy* (used in similar contexts, of a human relationship) are to do with emotion and ‘register’ (the language style appropriate to a particular occasion or situation of use).²⁴

3. Syntagmatic relations

Syntagmatic relations involve the way syntax (or word combination) affects, and is affected by, meaning. When words are combined into complex expressions, various semantic relationships are created, or expressed, between the constituents. In modern linguistics, these relations are considered to be inseparable from, and even part of, lexical

²³ Converses are somewhat different from the other categories of opposites. Cruse argues that while many converses are intuitively ‘opposites,’ they are not *inherently* binary; rather, their binarity arises from other factors (such as the oppositeness of the direction of transfer in *buy:sell*) (Croft and Cruse 2004, 166). In that sense, they do not instantiate a systematic logical relation (Löbner 2002, 92). Nevertheless, because of their frequency and their strongly conceived ‘oppositeness,’ I have included them here.

²⁴ On register, see Cruse 1986, 283; Sawyer 1972, 17–18.

meaning. As Barr puts it: “Only within their syntactical environment do words function” (Barr 1962, 154).²⁵

Two of the most fruitful angles from which syntagmatic relations have been analysed are **semantic composition** and **semantic roles**. Semantic roles are a key aspect of Charles Fillmore’s theory of Frame Semantics, so I will defer discussion of these until considering cognitive approaches to lexical semantics.

I have adapted the term ‘semantic composition’ from Croft (Croft and Cruse 2004, 249) to subsume a number of phenomena which are often treated separately, but all relate to various constraints on word-combinations that are deemed to be semantically well-formed or congruent.²⁶ These phenomena are usually called *selectional restrictions*, *collocations*, and *idioms*; and Croft demonstrates that these in fact describe points along a continuum of increasing conventionality (and thus decreasing predictability).

Of course, for our purposes the most important syntagms (or constructions) for analysing the sense of an expression are those which are also semantically congruent. Indeed, the vast majority of syntagms in the BH corpus are, we must assume, semantically congruent. The few exceptions would involve intentional incongruity,²⁷ errors in textual transmission, or errors in Masoretic vocalisation.

Selectional restrictions are “restrictions on possible combinations of words which are determined only by the semantics of the concepts denoted by the word” (Croft and Cruse 2004, 249).²⁸ Thus, in each semantically acceptable word combination, each word will exert restrictive pressure on the others—and very often, these restrictions are entirely predictable from the word meanings. For example, the Verb *drink* requires as its subject a living agent, and as its object a viscous

²⁵ Longacre, in championing the views of Wilbur Urban over those of Benjamin Lee Whorf, had earlier commented that “the meaning of a vocabulary item is a function both of the item itself and of the item as occurrent in various contexts”; and he added that the “amazing suppleness” of language is largely “due to the shaping and reshaping of vocabulary items to particular contexts” (Longacre 1956, 302).

²⁶ Croft treats these phenomena more generally as constructions, within his construction grammar approach. However, constructions are far more inclusive than the usual notion of syntagmatic relations.

²⁷ An example is the probable nonsense of Isa 28:10, לְעוֹלָם לְעוֹלָם לְעוֹלָם לְעוֹלָם לְעוֹלָם (despite the attempts of many ETs to ‘translate’ this).

²⁸ Cf. Lyons 1995, 124–25, and Cruse’s “syntagmatic affinity” (Cruse 1986, 16). On BH, see Berlin 1985, 75.

substance—though as we will see in chapter 3, the real requirement is that the subject and object may be *construed* as agentive and viscous, respectively.

When combinations include polysemous words (or homonyms), selectional restrictions will operate on word *senses*.²⁹ The word *bank*, on its own, is ambiguous between the senses “financial institution” and “edge of river.” However, the modifier *of the river* (as in *bank of the river*) will, in all but the most contrived contexts, select the latter sense of *bank*.

Selectional restrictions can also be extended to non-descriptive criteria, such as ‘discourse propinquity,’ that is, whether a particular term is appropriate for the tone or register established by the context (Cruse 1986, 100). Cruse cites the incongruity of *jolly* in *The ambassador delivered a jolly strong protest concerning the violation of his country’s sovereignty*.

Collocations are word combinations which are conventionally entrenched; however, the *degree* of entrenchment is not predictable from the ‘meanings’ of the words involved. For example, *highly emotional* and *extremely strong* are acceptable collocations, but *highly strong* is not; however, a new learner of English would not be able to predict which are acceptable. Similarly, there would be no way to predict that *a big mistake* is normal, while *a large mistake* is odd. Some words are highly restricted with respect to collocational acceptability; for example, in English the colour *blonde* is only ever used in reference to hair.

Finally, at the most conventional and least predictable end of the scale are idioms. According to Nunberg, Sag and Wasow, the single necessary property of idioms is that “their meaning or use can’t be predicted, or at least entirely predicted, on the basis of a knowledge of the independent conventions that determine the use of their constituents when they appear in isolation from one another” (Nunberg, Wasow, and Sag 1994, 492); though idioms usually possess several other characteristic features.³⁰

²⁹ This is what Waltke and O’Connor refer to as the “law of semantic pertinence,” which “requires that semantic entities harmonize in such a way as to make sense together” (IBHS §3.2.3e).

³⁰ The other properties listed by Nunberg, Sag and Wasow, which an idiom may or may not possess, are inflexibility, figuration, proverbiality, informality, and affect (Nunberg, Wasow, and Sag 1994, 492–93).

The patterns and conventions in the ways words are combined—the collocations and idioms in which they participate—are a significant aspect of their meaning. T. Muraoka explains:

A word is hardly ever used in isolation and on its own, but normally occurs in conjunction with another word or words. Such collocations help to establish the semantic ‘profile’ of the word concerned. Two words which are closely related may not wholly share their ‘partners,’ each thus gaining its individuality. Such information about collocations a given word enters provides important clues for defining its senses and determining its semantic ‘contours.’ (Muraoka 2002, XI)

4. *Semantic field theory*

One approach which has made an enormous contribution to answering questions about meaning, using the notion of sense relations (especially schematic paradigmatic relations), is that of **semantic fields**.³¹ Semantic field theory proposes that the lexicon of any language has a ‘field structure’; that is, that “words applicable to a common conceptual domain are organized within a semantic field by relations of affinity and contrast (e.g., synonymy, hyponymy, incompatibility, antonymy, etc.)” (Kittay and Lehrer 1992, 3). Thus, for a native speaker of any given language, words and expressions are conceptually grouped by virtue of networks of sense relations; and meaning may be fruitfully explored by considering these semantic groups (‘fields’ or ‘domains’).

This has direct application to the semantic analysis of words:

Semantic field theory makes a meaning claim that the meanings of words must be understood, in part, in relation to other words that articulate a given content domain and that stand in the relation of affinity and contrast to the word(s) in question. Thus to understand the meaning of the verb *to sauté* requires that we understand its contrastive relation to *deep fry*, *broil*, *boil*, and also to affinitive terms like *cook* and the syntagmatic relations to *pan*, *pot*, and the many food items one might sauté. (Kittay and Lehrer 1992, 3–4)

As well as grouping words together in various relationships, the fields themselves are sometimes organised into a hierarchical structure,

³¹ The idea of semantic fields is attributed to Jost Trier, and his study of the development of terms for cognitive faculties in German (Trier 1931).

with more specific fields in a relationship of hyponymy with more basic or general fields. This was the approach of Louw and Nida in their ground-breaking application of field theory to New Testament Greek lexicography.³²

Semantic field theory is often associated with the *componential analysis* of meaning (also known as *lexical decomposition*)—again famously advocated by Louw and Nida (Nida 1975). Grouping words into related fields is all very well, but there must be a way of articulating the similarities and differences between words. Abstract, generalisable paradigmatic relations (such as those described in §2 above) are of some use, but they do not usually capture the fine-grained differences, such as those between *brother*, *sister*, and *sibling*. Componential analysis attempts to solve this by breaking down the meaning of a word into sense-components or semantic features. Some sense-components are typically expressed in binary or ternary notation, to indicate presence, absence, or neutrality of a semantic component; thus, *brother* is [−FEMALE], *sister* is [+FEMALE], and *sibling* is [±FEMALE].³³ Other components are not amenable to binary/ternary analysis.³⁴

Componential analysis has a number of problems, not least of which is the fact that meaning is often not merely a compositional function of sense-components (Lyons 1995, 112). A classic example is that of *girl*, *boy*, *woman*, and *man*: it seems that in modern English, *girl* and *woman* are not as sharply opposed as *boy* and *man*, since *girl* tends to be used for people up to a much higher age than *boy*. Nevertheless, such problems are not necessarily insurmountable, and componential analysis can be a useful approach.³⁵

³² Louw and Nida 1988; Nida 1975; Louw 1985; Nida and Louw 1992. There have been several significant monographs in biblical semantics which have been based on semantic field theory, including Sawyer 1972, Rosenbaum 1974 and Erickson 1980. According to Rosenbaum (1974, 2 n. 10), the only application of semantic field theory to biblical studies prior to Sawyer's was T. Donald's study of "Folly" in wisdom books (Donald 1963).

³³ In binary notation, the FEMALE feature would simply be omitted for *sibling*.

³⁴ Cf. Lehrer's analysis of cooking terms (Lehrer 1974, 63).

³⁵ See Lyons 1995, 106–17 for a description and critique of componential analysis. Lyons mentions prototypes and meaning-postulates as two concepts which can be used to minimise the problems usually associated with componential analysis. Gerrit van Steenbergen (2002a, 2002b, 2002c) has sought to apply an improved version of componential analysis to BH lexico-semantic analysis, while strengthening it with insights from cognitive linguistics.

5. Terminological problems

There is a degree of terminological inconsistency in the use of semantic fields. Is the semantic field/domain of a word restricted to expressions that stand in paradigmatic relation with one another, or should we also incorporate syntagmatic relations? And what of words which are related in meaning, but are different parts of speech, such as מִשְׁפָּט “justice, judgment” and the verb שָׁפַט “judge”, or even מִשְׁפָּט and the verb צָדַק “be just, be in the right”? Just how broadly are we to define a semantic field?³⁶

John Sawyer, in his ground-breaking study of Hebrew words for “salvation” (Sawyer 1972), attempts to deal with some of these questions—but with limited success. This can be seen in his use of two terms, one broad and one narrow. He uses the term ‘associative field’ to include “all words associated in any way with a particular term”—not only by contrastive/affinitive relations or syntagmatic affinity, but even words which rhyme with it or look like it (Sawyer 1972, 30).³⁷ The associative field of a word cannot be defined precisely: there will be words which are only distantly and hazily related to the particular term, with no readily identifiable boundary between these peripheral elements and the surrounding lexical environment.

Conversely, Sawyer uses ‘lexical field’ or ‘lexical group’ for a restricted subset of the larger field, which consists only of “words very closely related to one another,” and which (he claims) “can be precisely defined for any given corpus” (Sawyer 1972, 30).³⁸ Unfortunately, it is not clear just *how* this precise definition is discovered, and Sawyer goes no further than defending the fact that there is an “intuitive element” in this kind of analysis.³⁹

³⁶ For a detailed discussion on the lack of consensus over the definition of a semantic field (including the syntagmatic/paradigmatic question), and the lack of adequate criteria for membership of semantic fields in most of the literature, see Faber and Mairal Usón 1999, 67–79.

³⁷ J. C. Lübke uses the term ‘associative field’ in a quite different way, to refer to the words which appear around a word in a given occurrence, or in its various occurrences—“the series of words in which it occurs in a text” (Lübke 2003, 139).

³⁸ Note that in his study, Sawyer refers to the associative field in question as “the HOŠIA ‘field,” and the subset as simply the “lexical group” or “central core of the field.”

³⁹ Gibson severely criticises Sawyer for this reliance on intuition, given that the object of study is a “dead” language (Gibson 1981, 13–16).

Ultimately, Sawyer simply identifies the particular lexical group that he believes is the “central core” of the associative field for “salvation.” He presents it as a group of Verbs (with *binyanim*) which have a close paradigmatic affinity to one another (הָלַךְ, עָזַר, הִצִּיל, הוֹשִׁיעַ), along with the cognates of each (e.g., יָשַׁע, מָלַט, פָּצָה, פָּרַק and מוֹשִׁיעַ, הַצֵּלָה, etc.).

Two questions immediately arise. Why does Sawyer organise the list around the Verbs, and imply (by virtue of English capitalisation) that these are somehow primary?⁴⁰ More importantly, why does he not include any words in contrastive or incompatibility relations with הוֹשִׁיעַ etc. (such as, perhaps, שָׁד, כָּלָה, or נִשְׁכָּר)? This is a significant omission. Indeed, Cruse suggests that opposites are “in some way cognitively primary,” since they tend to receive direct lexical recognition in everyday language and are apparent even to quite young children (Cruse 2004, 162). Is Sawyer’s ‘lexical group’ really a closed and precisely defined set of terms?

In fact, as cognitive linguists have been at pains to demonstrate, linguistic categories are more complex than this. Even in living languages, it often proves impossible to list a group of words as defining a clearly demarcated category.⁴¹

6. *Types of lexical relationship*

For the sake of precision, it is possible to distinguish at least five kinds of inter-lexical semantic relationship, all of which may play a part in sense relations and ‘fields,’ depending on how we define the

⁴⁰ This is especially interesting given that it is a study of Hebrew words for “Salvation”—using the English Noun. In fact, Faber and Mairal Usón (Faber and Mairal Usón 1999) argue at length for the priority of verbs in lexical organisation and description; but Sawyer offers no explanation for his procedure.

⁴¹ Pioneering work in categorisation was done by Eleanor Rosch (1978) and George Lakoff (1987). Langacker describes the general consensus: “Linguistic categories are typically complex: they group together, and treat as equivalent for certain purposes, a variety of distinct and sometimes quite disparate elements. Though similar to varying extents, these elements are not always susceptible to a uniform characterization affording absolute predictability of class membership; i.e., it is not always possible to find a description valid without qualification for all class members and inapplicable to all non-members. . . . Membership is commonly a matter of degree, resistant to strict delimitation, and subject to the vicissitudes of linguistic convention” (Langacker 1987a, 370–71).

latter. The first three pertain solely to meaning, and the last two include formal features.

1. *Paradigmatic relationships within the same part of speech.* These are the most commonly studied lexical relationships. Usually, paradigmatic relationships are restricted to words or expressions in the same grammatical category, though there may be minor differences.⁴²

2. *Paradigmatic quasi-relationships.* Sawyer's 'lexical group' for "salvation" terminology includes words with various parts of speech. Thus, the Noun **יָשַׁע** "help, deliverance, salvation" and the Verb **פָּלַט** "save" are in the one group by means of some affinitive meaning relation. To adapt Cruse's terminology, we may call this a paradigmatic 'quasi-relationship'—where two words would be in a particular paradigmatic relationship, except that they are in different grammatical categories from one another (Cruse 1986, 97).⁴³ All the words in Sawyer's 'lexical group' are thus in either paradigmatic or quasi-paradigmatic relations with one another.

3. *Syntagmatic relationships.* Words which are related syntagmatically may be not only of different grammatical categories, but may not be normally perceived as having any shared semantic content. Nevertheless, these relationships are a vital aspect of word meaning, and so may be included in the broader notion of 'semantic field.'

4. *Cognate (or root) relationships.*⁴⁴ Words in the same word 'family,' perceived as having a common 'root' or being cognate forms, are often closely related semantically. These root-based sense relations are sometimes largely accidental and idiosyncratic; nevertheless, the relations between such cognates may be strengthened by virtue of their common root. Cruse demonstrates that this is the case even in English, where perceived derivation is less psychologically significant

⁴² Cf. Cruse 1986, 97; 2004, 146.

⁴³ In fact, Cruse restricts his usage to the case where there is *no* available lexeme in the right grammatical category for one side of the relation. For example, there is no adjective in English which functions as a superordinate for the adjectives *red*, *yellow*, *green*; but the noun *colour* is a 'quasi-superordinate.' Strictly speaking, then, **יָשַׁע** is not in a relation of quasi-synonymy (or quasi-compatibility) with **פָּלַט**, since it is in a genuine such relation with **פָּלִיטָה/פְּלִיטָה**.

⁴⁴ The terms 'morphology' and 'root' are to be preferred over 'derivation' or 'etymology' in this context, because the important fact is not etymology, but rather synchronic language description and the conceptual structure of native speakers. De Blois is in danger of confusing things at this point (de Blois and United Bible Societies 2000, 101–2).

than in many other languages (Cruse 2004, 147–48). In the case of Hebrew, due to the structure of the language and its written form, commonness of root is often more obvious (or at least apparently so). “Whereas a root thus conceived is obviously an abstraction, it is nonetheless a linguistic and psychological reality, which can account for the essentially consonantal character of the early Phoenician and cognate alphabets and orthographies” (Joüon-Muraoka §34a n. 3). This, combined with ancient interest in folk-etymology, suggests that a perceived derivational relationship would often have induced a closer semantic relationship than otherwise might have been the case.

This is certainly not to say that there is some sort of ‘root meaning’ which takes priority over lexical meaning, or which comprises an essential component of the semantic value of every derivative. As a derived sense of a word becomes more entrenched and common, it may become detached conceptually from its parent; for example, a *computer* is no longer conceived as “something that computes.”⁴⁵ Nor is this to deny that semantically related cognates can undergo divergent semantic shifts (as with *חֲזַק* in post-biblical Hebrew). Nevertheless, Sawyer argues that, for the reasons given above, we must take into account what he calls “a peculiar kind of etymological motivation in OT Hebrew” (Sawyer 1972, 50).⁴⁶

Reinier de Blois goes even further, at least in terms of lexicon-writing. He claims that the distinction between parts of speech “may not always be relevant from a semantic point of view,” and that there is “actually no reason to treat an adjective like *חֲזַק* ‘strong’ differently from its root [i.e., stative verb] *חֲזַק* ‘to be strong’” (de Blois and United Bible Societies 2000, 101–2). He readily acknowledges the caveats I stated above. Nevertheless, examples abound in BH of morphologically related word groups with very strong semantic correla-

⁴⁵ This is one of Langacker’s examples of the variable nature of ‘analyzability’ in composite or derived LUs: “We can reasonably posit a scale of analyzability, which finds at one extreme expressions that are novel and fully analyzable (e.g., *regurgitator*), and at the other extreme, etymologically composite expressions such as *drawer* (e.g., *It’s in the bottom drawer*) that for all synchronic purposes are monomorphemic and fully unanalysable” (Langacker 1987a, 297). Other *-er* words at the more analyzable end of the scale are *swimmer*, *mixer*, and *complainer*; while *professor*, *propeller*, and *screwdriver* are further towards the unanalyzable end.

⁴⁶ Cf. IBHS §5.1a: “The system of roots is part of the speaker’s knowledge of the language, but the resulting abstractions should not be pressed too hard, especially on semantic grounds.”

tions. Thus, in BH, a שֹׁפֵט “judge” must execute מִשְׁפָּט “justice”. Of course, מִשְׁפָּט is also executed by a מֶלֶךְ “king” and by הָאֱלֹהִים “God”; nevertheless, in a case such as שֹׁפֵט/מִשְׁפָּט, the obvious and intimate relationship between the terms is highlighted by their morphological affinity.

Even more obvious is the relationship between different *binyanim* of the same Verb root, which most lexica usually list under the same entry. Whether they should be considered different senses of a single Verb root, or separate lexemes with a special root relationship, is debatable; however, commonness of root must often have at least some significance in the strength of semantic relationship.

One question which immediately arises is whether there is ever a *synchronic dependence* of meaning between morphologically related words. That is, when two cognates clearly have a close semantic relationship, is the meaning of one (for native speakers) conceptually dependent on, or secondary to, the meaning of the other more ‘basic’ or ‘primitive’ word?⁴⁷ To English speakers, for example, is the (prototypical) meaning of *lengthen* conceptually based in some way on the meaning of *length*, or *befriend* on *friend*, or *energise* on *energy*?

To speakers of BH, it is likely that some Causative Verbs were conceptually built on the more primitive meaning of their corresponding Stative Verb or Adjective (e.g., צַדִּיק/צָדֵק “be righteous” → הַצַּדִּיק “make/declare righteous”; קֹדֶשׁ/קָדַשׁ “be holy” → הַקֹּדֶשׁ “make holy”). The same may be true of some deverbal Nouns (אַרְגָּא “weave” → אֹרֵג “weaver”), denominative Nouns (בָּקָר “cattle, head” → בּוֹקֵר “herdsman”), or denominative Verbs (אָהַל “tent” → אָהַל “to tent”; מָלַךְ “king” → מָלַךְ “to be(come) a king”).⁴⁸ Other cases are more difficult. What of the relationship between a Stative Verb and an Adjective (e.g., קֹדֶשׁ “be holy” and קָדַשׁ “holy”)?⁴⁹ Even for modern languages, some of these questions cannot be resolved with certainty.

⁴⁷ We must be careful at this point to restrict the discussion to the perceptions of native speakers. Whether a word is diachronically a derivative of another word, or whether it is perceived by particular linguists as a derivative, is hardly relevant. We are concerned with sense relations in the minds of native speakers.

⁴⁸ GKC (§38) differentiates between ‘primitive’ verbs (e.g., מָלַךְ “reign”), verbal derivatives (e.g., קָדַשׁ “sanctify” and הִתְקַדַּשׁ “sanctify oneself,” from קָדַשׁ “be holy”), and denominative verbs (e.g., שָׁרַשׁ [pō’ēl] and הִשְׁרִישׁ [hip’īl] “take root,” and שָׁרַשׁ [pi’ēl] “uproot,” from שָׁרַשׁ “root”). However, this is meant purely as a diachronic classification.

⁴⁹ For further examples, see IBHS §5.2, §5.7, §22.5.

5. *Phonological and other relationships.* Sawyer includes in his ‘associative field’ not only all of the above types, but other relationships which may only have a very faint semantic component (if any), such as phonological or orthographical similarity.⁵⁰ This is the broadest possible definition of a semantic field.

Such relationships must not be underestimated, for they can be very significant in the literature of a language/culture. Bezalel Porten argues as such with his study of the verbs שׁוּב and יָשׁוּב in the HB (particularly Jeremiah) and some other Northwest Semitic texts (Porten 2003). Porten calls this a “sound word pair,”⁵¹ and claims that it is “ubiquitous” in the HB, occurring in “virtually every book” (2003, 375). He concludes that “its ubiquity testifies to its being a fixed feature of the language, not only of the Hebrews but also of their Northwest Semitic neighbours” (Porten 2003, 381–82). Nevertheless, words with semantic similarities tend to be more strongly connected mentally than words with formal similarities alone (Bybee 1985).

We will come back to sense relations and fields later. First of all, however, we need to see how these ideas have been modified and nuanced by the *cognitive* branch of linguistic semantics.

⁵⁰ Of course, a distinctive phonological or orthographical similarity may give rise to a semantic relationship, such as close collocational affinity: *big bang, fine feathered friend*, and so on.

⁵¹ Porten mentions in passing that the origin of the relationship could be either phonological or morphological (2003, 381). If it were the latter, “formal word pair” may be more appropriate; though in my view, a phonological origin—or “a pleasant euphony,” as Porten calls it (2003, 375)—is the more likely.

CHAPTER THREE

COGNITIVE SEMANTICS AND SEMANTIC FRAMES

Since the 1970s, new impetus has been given to the study of linguistics, and of semantics in particular, from the development of cognitive psychology. Cognitive linguistics has developed into a broad movement in modern linguistics.¹ It incorporates a range of approaches to language, all of which share a key assumption: “the belief that language forms an integral part of human cognition, and that any insightful analysis of linguistic phenomena will need to be embedded in what is known about human cognitive abilities” (Taylor 2002, 4).

When it comes to semantics, the most promising and valuable contribution of cognitive linguistics is the fundamental perspective from which it views the subject: that *meaning is in the mind*. “Meaning resides in conceptualization” (Langacker 2003, 180).² Meaning is not an inherent ‘property’ of a word or a sentence; nor is it some external, self-sufficient entity to which a word is connected. Words denote, or symbolise, human mental images and experiences. Thus, meaning is (if I am the author) everything in my mind that I intend to convey by an expression. It is (if I am the speaker) what I understand or construe from an expression. Meanings are concepts.³

¹ Important and/or pioneering treatments include Lakoff 1987; Langacker 1987a, 1990, 1991, 2000b; Ungerer and Schmid 1996; Taylor 2002; Croft and Cruse 2004; and Evans and Green 2006. Talmy 2000 and the essays in Cuyckens, Dirven, and Taylor 2003 focus on cognitive semantics in particular.

² In fact, cognitive linguists generalise this to all areas of linguistic knowledge, not just semantics. Croft and Cruse, for example, argue that “syntactic, morphological and phonological representation is also basically conceptual,” since “sounds and utterances must be comprehended and produced, and both of those processes involve the mind” (Croft and Cruse 2004, 2); cf. Langacker 1991, 1.

³ Cf. also Langacker 1987a, 5; Verhagen 2003, 243; Croft and Cruse 2004, 7; van der Merwe 2006a. ‘Concept’ is notoriously difficult to define. Jackendoff’s working definition of a concept is fairly standard: “a mental representation that can serve as the meaning of a linguistic expression” (Jackendoff 2004, 325). Other definitions include “a principle of categorization” (Taylor 2002, 43, emphasis original); or more fully, “the descriptive information that people represent cognitively for a category, including definitional information, prototypical information, functionally important information, and probably other types of information as well” (Barsalou 1992, 31). Dirven and Radden (2004, 13) define a concept more informally as “a person’s idea of

Of course, the idea that meaning is basically conceptual would be widely affirmed outside cognitive circles. The great strength of the cognitive approach, however, is in its insistence on keeping that fact foremost in all theorising and modelling. Concepts are given priority.⁴ This particularly contrasts with (and arose as a reaction against) generative grammar, with its insistently formalist approach and its marginalisation of semantics.⁵

In biblical studies in recent years, there has been a growing interest in seeking to apply insights from cognitive linguistics to BH semantics and lexicography. Biblical scholars have utilised the work of Ronald Langacker (1987a, 1991, 2003), George Lakoff and his associates (Lakoff 1987, 1990; Lakoff and Johnson 1980; Lakoff and Turner 1989), Ungerer and Schmid (1996), and John Taylor (2003). They have sought to adopt and apply such ideas as conceptual domains and/or frames, categories and categorisation, image schemas, prototypicality and prototype effects, meaning potential, and everyday metaphor mappings.⁶

Certainly these are all fruitful areas of exploration for BH, and I will discuss and utilise some of them in due course. However, the main focus of this study is another branch of cognitive semantics, which has unique strengths: Frame Semantics, as pioneered by Charles J. Fillmore and developed and applied in FrameNet, an English lexicography project at the International Computer Science Insti-

what something in the world is like.” Langacker (2003, 180) simply defines “conceptualization” as “any aspect of mental experience.”

Such definitions may or may not be adequate (see the discussion and defence in Taylor 2002, 42–44, 62–65). However, the fact that a concept is difficult to define does not make ‘concept’ an invalid or unusable concept! Thus, while Croft and Cruse do not define ‘concept,’ they make a working assumption that “concepts correspond to meanings of linguistic units (words, complex expressions or constructions)” (Croft and Cruse 2004, 14). Of course, concepts also exist that do not correspond to linguistic units; indeed, “only the lesser part of our concepts can be expressed in language” (Löbner 2002, 174).

⁴ “Where traditional linguistic theory claims that words have meanings, the average cognitive linguist would rather say that meanings have words” (de Blois 2005).

⁵ Cf. Croft and Cruse 2004, 1–2, 225–29; van der Merwe 2006a.

⁶ Discussions of these ideas from the perspective of biblical studies can be found in: Van Hecke 2001, 2003a, 2003b, 2003c, 2005a, 2005b; de Blois and United Bible Societies 2000; de Blois 2002, 2005; van Wolde 2003a, 2003b; van Steenberghe 2002a, 2002b, 2002c; Feyaerts 2003; Rechenmacher 2004; van der Merwe 2006a, 2006b. For a concise summary of the various cognitive abilities and processes which are taken into consideration in cognitive linguistic analysis, see Langacker 2000b, 1–3.

tute in Berkeley, California (henceforth, Fillmore's Frame Semantics, or simply Frame Semantics).⁷

More broadly, my own adaptation of Frame Semantics is located in the general cognitive approach of William Croft and D. Alan Cruse (Croft and Cruse 2004), who explore and refine Fillmore's ideas within their larger framework.

1. *The dynamic construal theory of meaning*

Umberto Eco (1984, 43) points out that the understanding of a sign "is not a mere matter of recognition (of a stable equivalence); it is a matter of *interpretation*." The basic proposition of Croft and Cruse's approach, and the idea that undergirds all their semantic analysis, is that meaning is a matter of **dynamic construal** in context. The notion of construal is by no means original to Croft and Cruse. Ronald Langacker adopts a similar stance in his theory of Cognitive Grammar: "meaning is a function of both content and construal" (Langacker 2000b, 5).⁸

This theory is a response to the persistent problem of the "apparently infinite flexibility of meaning in context" (Croft and Cruse 2004, 97). The solution they propose is not, for example, to locate stability and structure in the lexicon, and variability in pragmatic rules and principles. Their solution is that

words do not really have meanings, nor do sentences have meanings: meanings are something that we construe, using the properties of lin-

⁷ Further information and references will be provided in chapter 5; see especially n. 1 on p. 107 and n. 9 on p. 108. Fillmore's Frame Semantics is to be distinguished from other approaches to semantic frames (e.g., those found in Lehrer and Kittay 1992 and Taylor 1995, 2002). The various approaches are all related to one another, but Fillmore's model (and hence FrameNet) has some unique features and capabilities, and it is these that I wish to explore and exploit in this study. As far as I can tell, all attempts thus far to apply frame semantics to BH have been based on approaches other than that used in the Berkeley FrameNet project. These attempts include the work of Reinier de Blois and the *Semantic Dictionary of Biblical Hebrew (SDBH)* (de Blois and United Bible Societies 2000; de Blois 2000, 2002), the Key Terms in Biblical Hebrew project, which has yet not been published (Key Terms in Biblical Hebrew 2007), and the work of Gerrit van Steenberg (2002a, 2002b, 2002c) and Christo van der Merwe (2006a, 2006b).

⁸ Croft and Cruse draw extensively on Langacker's work; see, for example, Langacker 1987a; 1987b; 2000b, 5, 361–76. As well as 'construal,' Langacker uses 'imagery' with identical meaning (Langacker 1987b, 56; 2000b, 378 n. 8).

gusitic elements as partial clues, alongside non-linguistic knowledge, information available from context, knowledge and conjectures regarding the state of mind of hearers and so on. (Croft and Cruse 2004, 98)⁹

Although seemingly radical, this is ably defended by Croft and Cruse, and explains many problematic semantic phenomena. Moreover, contrary to first appearance, it does not open up words or utterances to any meaning whatsoever. “An isolated sign certainly has semantically relevant properties, semantic potential, and these properties have an influence on eventual interpretation, but they are to be distinguished from the interpretations themselves” (Croft and Cruse 2004, 99). The interpretations are far more vivid and (metaphorically) alive than mere signs or definitions. When we read or hear a text, detailed mental images are **evoked**, rich associations from which the understanding arises.

There are many different constraints which limit this process of construing interpretations. These constraints are combined in a complex fashion—sometimes working together to strengthen the case for a particular interpretation, sometimes in tension with one another. They vary in strength, stability, and the amount of cognitive effort required to resist them and opt for an alternative construal; however, all of them can in principle be overcome.

Croft and Cruse list, somewhat informally, various classes of interpretive constraint (Croft and Cruse 2004, 101–3). I have turned their four classes into five:¹⁰

1. Human cognitive capabilities, including “the universal tendency to impose a figure-ground structure,”¹¹ the limitations of memory, and so on

⁹ Langacker expresses a similar viewpoint: “An expression’s meaning is not ‘in’ its words, but emerges through mental construction that draws upon all available resources” (Langacker 2003, 180).

¹⁰ Croft and Cruse combine classes 4 and 5 into one class, which they call “context,” or alternatively “common ground” (after Clark 1996).

¹¹ Figure-ground alignment stems from the way spatial relations are “expressed by specifying the position of one object, the **figure**, relative to another object [or objects], the **ground**” (Croft and Cruse 2004, 56, emphasis original). However, this structure is frequently and naturally extended to other domains, where non-spatial, logical relationships are construed in ways that mirror figure-ground patterns. The figure-ground distinction was introduced to cognitive linguistics by Leonard Talmy (1975; 1978; 2000, chap. 5).

2. The nature of reality or the nature of our experience, which at various points will lend itself more readily to one type of construal over another
3. Societal convention, in terms of the way words in given situations are normally or frequently construed
4. Context
5. The background of stored knowledge and experiences, much of which is common to the community in which communication occurs, and which places a less immediate type of contextual constraint on interpretation¹²

Context (class 4) requires further consideration. A number of different types of context provide constraints to the construal process. Linguistic context relates to the preceding discourse, the immediate linguistic environment (phrase or sentence), and the type of discourse (genre, register, field of discourse). Physical context relates to what is seen, heard, and so on, in the immediate surroundings. Social context relates to the situation of the participants, and particularly their social relations.

Context constrains interpretation in a number of ways, which are related yet important to distinguish (Cruse 1986, 50–54).¹³ Contextual *selection* relates to the way in which the relevant sense of a polysemous word is isolated by contextual indicators. Contextual *modulation* (or *modification*) relates to the way in which a prototypical sense may be altered, or a more peripheral sense activated, by contextual factors—through promotion or demotion of various semantic ‘traits,’

¹² Taylor also lists various (interrelated) aspects of context which shape our understanding of concepts and categories, and thus of word meanings (Taylor 2003, 176). In a similar vein, Langacker lists various facets of the “conceptual substrate” which shapes and supports an utterance: “(i) the physical, social, and cultural **context**—both the immediate context (currently apprehended) and presumed shared knowledge; (ii) the **viewing arrangement**, i.e., the relationship between the conceptualizers and the situation being conceived and linguistically expressed; (iii) **mutual assessment** by the interlocutors of what the other knows and is now attending to; (iv) the **ongoing discourse** itself, including the conceptual structures evoked and constructed as it unfolds; and (v) how all the foregoing factors **develop** and **change** as the discourse proceeds (their history, current status, and future projection)” (Langacker 2003, 184, emphasis original; cf. Langacker 2001, 144–45, where he separates “context of speech” and “shared knowledge”).

¹³ While these effects are usually explored in terms of linguistic context, the other kinds of immediate context are just as relevant.

or highlighting or backgrounding traits.¹⁴ To use Cruse's examples (1986, 53), each of the following sentences refers to the whole car, yet highlights a different part or attribute: *the car needs servicing*, *the car needs washing*, *we can't afford that car*, and *our car couldn't keep up*. In cognitive terms (which we will explore in due course), these notions could be re-expressed as profiling particular 'frame elements,' profiling background frames in the frame matrix, or activating particular frames in the set of frames potentially invoked by *car*.

The **default construal** of a word or sentence—that is, its usual interpretation in a minimal or neutral context—will generally be determined by a combination of all the constraints listed above, apart from those in class 4. The immediate contextual constraints, however, are extremely powerful and flexible in their capacity to override the default construal.

This is not intended as a definitive list of all the kinds of interpretive constraint. Nevertheless, it illustrates the diversity of factors to be considered in the construal process. Furthermore, the variety and complexity of these constraints, all of which are in operation in most instances of language-use, accounts for the "apparently infinite flexibility" of meaning, and the difficulty of providing a comprehensive analysis of the 'meaning' of any word or sentence.

Underlying and preceding this process of constrained construal, Croft and Cruse postulate a deeper level of conceptuality which is associated with the meaning of each word. They call this 'purport'—though describing precisely what purport *is* seems rather more difficult. The term goes back to Louis Hjelmslev of the Copenhagen School, for whom purport (Danish *mening*) was an "amorphous 'thought-mass,'" independent of any one language, which is "formed or structured differently in different languages" to produce linguistic expressions (Hjelmslev 1969, 52).¹⁵ Similarly, for Croft and Cruse's lexical semantics, purport is the unstructured "body of conceptual content" with which a lexical item (word form) is associated (Croft and Cruse 2004, 100). It is not to be equated with a meaning or inter-

¹⁴ Contextual selection and modulation apply not only to discrete senses, but also to partial-polysemy effects, such as facets and micro-senses; see §3 below.

¹⁵ See also Hjelmslev 1969, 76–77. For a discussion of Hjelmslev's notion of purport, and its place in his two-plane semiotic system (the expression-plane and the content-plane), see Eco 1976, 50–54. Elsewhere Eco calls Hjelmslev's idea of purport "notoriously controversial" (Eco 2001). See also Harder 1996, 514–15 n. 4.

pretation, or even with a “pre-meaning”; rather, it is more like a somewhat nebulous mass of pre-linguistic conceptual content, which may be more or less coherent, even disjunct at points. Its relationship to interpretation is that it is “part of the raw material contributed by the word to processes of construal” (Croft and Cruse 2004, 100).¹⁶

2. *Lexical meaning versus encyclopaedic information?*

This view of word meaning, which I have briefly outlined, leads me to reject the ancient and traditional model of lexical semantics, in which there is a clear-cut and essential difference between *lexical meaning* and *encyclopaedic* (or *extra-linguistic*) *knowledge*—the latter being “the overall knowledge that typical members of the speech community have” about an entity or event (Langacker 2003, 187). Many modern linguists, particularly those in the cognitive field, have moved away from such a fundamental distinction—or have at least allowed for a blurring of the boundary between the two.¹⁷ Such views are not restricted to those from the cognitive stable, however; Umberto Eco (1984, 46–86), from a philosophical perspective, mounts an extended critique of the traditional distinction, going so far as to say that *all* meaning is necessarily encyclopaedic.¹⁸

¹⁶ Purport, especially the cognitive process of construal from purport through a series of intermediate pre-meanings, is not important to this study. I mention it merely for completeness. See Croft and Cruse 2004, 103–4 for further details. John Taylor’s suggestions regarding prototypes and “instance clusters” may also provide a helpful direction for considering purport (Taylor 2003, 175). For Langacker, a lexical item “evokes a set of cognitive domains as the basis for its meaning” (Langacker 2000b, 5); but this seems more structured than Hjelmslev’s purport.

Indeed, one shortcoming of Croft and Cruse’s account is that they do not explain the relationship between purport and conceptual frames/domains (cf. §4 below). Clearly frames are higher-level conceptual phenomena than purport: frames are construed and structured, whereas purport is not construed and is largely unstructured. Are frames an intermediate conceptual structure, belonging in the realm of conventionally constrained pre-meanings, in the context of which interpretations emerge (through further construal)? Perhaps, although it is not clear. At any rate, Croft and Cruse’s frames seem far more dynamic than those in Fillmore and Atkins’ account.

¹⁷ “It is **not** claimed that a lexical item’s linguistic meaning simply **is** the total body of relevant general knowledge. Rather, associated with the linguistic form are certain usual, conventional ways of accessing it” (Langacker 2003, 188, emphasis original).

¹⁸ Eco traces the origin of the traditional demarcation to the idea that language could be treated as the semiotic system *par excellence*, and the model for all other

A closely related issue is the distinction, again a traditional one, between semantics (the pure, inherent meaning of linguistic items) and pragmatics (the study of phenomena related to language-in-use). This distinction has also been increasingly questioned in recent decades. Most current linguists at least place far more importance on the study of pragmatics, and some question whether there is a clear boundary between the two.¹⁹

Nevertheless, not all modern linguists are in favour of theories of meaning which blur the boundary.²⁰ For example, Sebastian Löbner, arguing against Ungerer and Schmid (1996), objects that theories such as these fail to distinguish between the true meaning of a word (the “semantic concept”) and the more highly specified “cultural concept” associated with it (Löbner 2002, 200–205). That is, Löbner argues for the traditional solution to the problem of the “apparently infinite flexibility” of meanings in context: he places stability in the lexicon, and flexibility elsewhere (in this case, in cultural knowledge).

Löbner uses Ungerer and Schmid’s cognitive analysis of *apple juice* to argue his case.²¹ The fact, says Löbner, that most people associate apple juice with “yellow or similar colour,” “sweet or sweet-sour taste,” “fruity,” and so on, is not because these are semantic features of ‘apple juice.’ Rather, they are aspects of the more specific cultural category associated with apple juice, which is formed from the “*actual* denotation of the word”—the particular instances of *apple juice* that we have encountered (Löbner 2002, 204). The semantic category (i.e., the true lexical meaning), however, includes not just all *actual* referents, but all *potential* referents of *apple juice*; and the only feature necessary for something potentially to be considered *apple juice* is: “made from apples.” For example, the food industry could create a blue-coloured, peppermint-flavoured juice which is made from apples, and we would readily accept it as *apple juice*. Löbner concludes: “The

semiotic systems—an idea which apparently stems from Greek philosophy, particularly the Stoics, and Augustine (Eco 1984, 33–34).

¹⁹ On semantics and pragmatics in BH, see van Steenbergen 2002a, 33–34.

²⁰ On the continuing debate, see Boas 2003, 168–71, Peeters 2000a, and the other articles in Peeters 2000b; also Eco 1984, 46–86; Langacker 1987a, 154–66; Wierzbicka 1995; Fellbaum 1998, 6; Langacker 2000b, 4; van Steenbergen 2002c, 58; 2003; Aitken 2003, 119, 31; Langacker 2003, 187–92; Cruse 2004, 28–30. Earlier discussions are cited in Eco 1984, 47.

²¹ Cf. Ungerer and Schmid 1996, 88–90, 95.

word *apple juice* means ‘juice made of apples.’ Period” (Löbner 2002, 203).

However, there are instances in which simple definitions of ‘true meaning’ are clearly inadequate. Cruse, in discussing the word *knife*, considers this definition: “A knife is an implement with a blade and handle used for cutting” (Cruse 2000, 37). While this definition seems intuitively correct, it fails to distinguish knives from chisels and saws. Indeed, a superior definition recognises that *handle*, *blade*, and *cut* all have “mutually selecting” sub-senses: thus, “A knife is an implement with a knife-type handle and a knife-type blade used for cutting knife-wise” (37). Clearly, we only properly understand what a *knife* is on the basis of our real-world experience of knives—what they are typically like and how they are used.²²

In other words, even if there is a broad semantic category corresponding to the ‘true meaning’ of a term, which is contextually shaped and specified in each individual use, this semantic category cannot be dissociated from encyclopaedic knowledge and experience of the world. Even in a minimal, default context, various aspects of a person’s ‘cultural knowledge’ will contribute to the meaning evoked; and the process of construal is far more complex than Löbner’s strict compositional analysis of *apple juice*.

True, food manufacturers could market a new type of apple juice that does not match any of my culturally-formed *apple juice* associations. However, the fact that I might nevertheless accept it as *apple juice* is because the features that are normally evoked (“fruity,” etc.) are overridden by other, in this case stronger, constraints. The strange colour and taste will act as negative constraints in accepting it as *apple juice*; but given the nature of reality (constraint [2] above)—that the juice has, in fact, been made from apples—I may readily expand my current understanding of what constitutes *apple juice*. Thus, rather than limit the ‘true’ meaning of *apple juice* to “made from apples,” I would suggest that in this *particular* case, the “made from apples” feature of apple juice may be a stronger constraint on interpretation than the others listed, precisely because of the nature of the reality.

In fact, however, Löbner’s argument fails in both directions. On the one hand, I am not so certain that everybody would easily accept

²² Cf. also Taylor 2003, 171–72.

blue, peppermint-flavoured juice as *apple juice*. The flavour constraint, in particular, is also very strong, and whether it would so easily be overridden by the “made from apples” feature would need testing. In my own informal testing, a number of people reacted strongly against calling such a drink *apple juice*.

Conversely, even the “made from apples” feature is a breakable interpretive constraint. Food manufacturers could conceivably create a drink that looks, smells, and tastes like prototypical apple juice, and that contains the same positive nutritional content, but is made using artificial flavours and additives. If they were to call it *apple juice*, I suspect that many people would accept the label.

A clearer example, from real life, is a mango chutney that my mother has been making for several decades. By Löbner’s reckoning, *mango chutney* means “chutney made from mangoes”; however, it happens that this particular chutney is no longer made from mangoes. My mother began making it in India, where mangoes are cheap and readily available. After we moved to Australia, she started using green paw-paws instead, since the result tastes essentially the same. Nevertheless, what my mother makes is still, to my family, undoubtedly *mango chutney*—the same *mango chutney* that she used to make, but with a relatively unimportant change in ingredients. In this case, the strong constraint of the “made from mangoes” feature has been overridden by continuity of taste, texture, and use, as well as our common history.

In the final analysis, as Langacker argues, it is simply inconceivable that our general world knowledge and bodily experience could be excluded from the lexical (or “linguistic”) meaning of a word: “How could linguistic meanings represent anything other than the evocation, exploitation, and adaptation of the conceptualizations constituting our general knowledge of the world?” (Langacker 2003, 192).

This is not to say that we should draw no distinction whatsoever between lexical meaning and encyclopaedic knowledge; however, there is no definite boundary between the two. “Rather, a lexical item draws upon (taps into) general knowledge in a gradient manner, with no specific cut-off point” (Langacker 2003, 188). Moreover, the process of construal (or conceptualisation) is so flexible and powerful that “the specific value a lexeme assumes in actual usage need never be precisely the same on any two occasions” (Langacker 2003, 188).

For these reasons, any contemporary approach to BH lexicology must find a way of incorporating encyclopaedic knowledge into lexical description—indeed, the recent approaches of Reinier de Blois (*SDBH*; de Blois and United Bible Societies 2000) and Gerrit van Steenbergen (2002c) are significant advances in this respect.²³ As van Steenbergen argues, the need for such an approach is all the more urgent in the case of BH, given the temporal and cultural distance between the source and receptor languages (van Steenbergen 2003, 271, 307).²⁴

3. *Dynamic construal and delineation of senses*

We will return now to the idea of dynamic construal, and its role in analysing the problematic nature of polysemy.

Linguists, and lexicographers above all, now recognise that words do not always exhibit discrete, mutually-exclusive ‘senses.’ Instead, “meanings are discovered in *clusters* of instances that share enough common features to justify being treated as a coherent ‘meaning group’” (Atkins, Rundell, and Sato 2003, 334).

This is to be expected if, indeed, meaning is a matter of dynamic construal, based on an interaction between conventional constraints and an underlying ‘purport’ or prior conceptual content. Cruse explains: “Purport may consist of a relatively coherent body of content, or it may display relatively disjunct parts (as in traditional ‘homonymy’); or, indeed any intermediate degree of coherence or lack of it” (Croft and Cruse 2004, 100). The crucial point is that this degree of disjunctness is a continuum or spectrum, rather than an absolute disjunction; and hyponymy, polysemy and monosemy should be viewed as points or regions along this continuum.

Thus, most uses of a word will fall within the bounds of one dictionary ‘sense,’ without being identical to one another. The dictionary sense of a word will undergo modulation, while remaining within the

²³ Van Steenbergen particularly focuses on the notion of *worldview*, and its place in semantic description. In terms of lexicography, he states, “Lexicographers should recognize that extra-linguistic information is irreplaceable in cross-cultural communication. This information is just as much part of the semantic contents of a lexical item as the purely linguistic and/or semantic data that are part of lexicographical description” (van Steenbergen 2003, 309).

²⁴ Cf. also de Blois and United Bible Societies 2000, 5, 19–20.

bounds of the sense—for example, by pertaining to a prototypical example (*I wish I could fly like a bird*), narrowing down to a sub-part (*The car has a puncture*), relaxing the prototypical meaning (*The children formed a circle*), and so on.²⁵

However, some uses may fall outside all of the dictionary senses. Language is flexible and powerful enough to enable entrenched senses to be modified and extended dynamically—for example, with ad hoc, novel metaphors and metonyms.²⁶ Moreover, Cruse argues that “nonce readings” display the same characteristics as entrenched senses (Croft and Cruse 2004, 110–12). As a novel use ‘catches on’ and starts to become more entrenched, lexicographers may start to include it as a separate, conventionalised sense.

With the entrenched senses of a polysemous word, it can be difficult to determine the boundary between two senses, or even to decide whether a word involves discrete senses or merely variations on a single sense.²⁷ According to Cruse, *full* polysemy holds where two senses or readings are clearly distinct from one another (Cruse 2004, 104–6). ‘Distinctness’ here includes not only discreteness, but also antagonism of senses—that is, the senses “compete with one another” so that it is “impossible to focus one’s attention on both readings at once” (Cruse 2004, 106).

However, Cruse identifies a number of semantic phenomena which fall somewhere in between full polysemy and monosemy—“degrees of distinctness which fall short of full sensehood, but which are nonetheless to be distinguished from contextual modulation” (Cruse 2004, 112). Cruse discusses four potential types of partial-polysemy, which in his opinion show varying degrees of antagonism and discreteness:²⁸

1. Facets, such as the TEXT and TOME readings of *book*
2. Perspectives (“ways-of-seeing”) from which a unified concept is viewed: as a whole consisting of parts, as a kind in contrast with

²⁵ Examples drawn from Cruse 2004. The idea of ‘modulation’ of a dictionary sense is similar to the distinction between ‘lexical meaning’ and ‘contextual meaning’—“the former being the contribution of a word in itself, and the latter the elements derived from the context, normally labelled *usage*” (van Steenberghe 2003, 269, following Louw 1991, 137).

²⁶ Cf. Cruse 2004, 204–11; Langacker 2003, 211–15.

²⁷ Cf. Taylor 2003, 174–75.

²⁸ See ch. 5 in Cruse 2004 for discussion and examples.

other kinds, as having a certain function, or from the point of view of its origins²⁹

3. Micro-senses, such as the specific, subordinate senses of *knife* (such as “table knife,” “weapon knife,” “surgical knife,” etc.), one of which will usually be activated in the construal process³⁰
4. Sense spectra, which resemble something of a semantic continuum containing local senses³¹

All this makes the analysis of polysemy a delicate operation! It does not entirely invalidate the standard lexicographic practice of listing ‘the senses’ of a word; but it does necessitate a more careful understanding of this practice. What dictionaries generally provide is, in

²⁹ These categories are Cruse’s reinterpretation of James Pustejovsky’s four “qualia roles”: respectively, the constitutive role, the formal role, the telic role, and the agentive role (Pustejovsky 1995).

³⁰ Indeed, a significant property which distinguishes micro-senses from contextual modulation is that of “default specificity” (Croft and Cruse 2004, 129–30). Words such as *knife* have a strong tendency towards specific rather than generic construals; that is, in most contexts *knife* will evoke a specific kind of knife. Conversely, activation of the hyperonymic reading usually requires overt contextual pressure (as in *all kinds of knives*).

³¹ While I have listed this with Cruse’s other categories, I find his defence of sense spectra unconvincing, both in Cruse 1986 and in Cruse 2004. The primary example he gives does not hold up under scrutiny. He claims that the meaning of *mouth* is a sense spectrum, with the core (literal) meaning being the mouth of a human or animal, and various metaphorical extensions moving progressively further from the literal meaning. Thus, *human mouth* is at one end of the spectrum, *mouth of bottle* and *mouth of cave* are somewhere in the middle, and *mouth of river* is at the other end. He constructs two sentences to demonstrate that coordination of the senses at the extremes of the spectrum results in zeugma (coordination of incompatible senses), while coordination of those in the middle does not—namely, *?The poisoned chocolate slipped into Contessa’s mouth just as her yacht entered that of the river*, but *The mouth of the cave resembles that of a bottle* (Cruse 2004, 118). However, the apparent normality of the latter is due to the meaning of the verb *resemble*, which invites the hearer to construct some kind of correspondence between its arguments. Thus, compare Cruse’s examples with: *Contessa’s mouth resembles that of a river* (which is at least more normal than the first sentence above, though it is not as easy to find a correspondence), and *?The note slipped out of the mouth of the bottle just as the bottle entered that of the cave*.

Rather than seeing *mouth* as a sense spectrum, it is more likely that the original, non-figurative meaning “animal mouth” has undergone a variety of fairly independent metaphorical extensions, all based on either functional or physical similarity (or both), but not arranged in a linear, spectral fashion. Cruse’s spectrum probably relates to the fact that some of the derivative senses have become cognitively detached from the “animal mouth” sense—a phenomenon explored by Croft and Cruse (2004, 204–6).

fact, a list of the most common and conventional construals of a word—the entrenched meaning-clusters, or default construals (Croft and Cruse 2004, 104). It must be recognised, however, that these conventional construals may be more or less discrete; and that every conventional construal will be capable of contextual variation.

Langacker similarly argues

that anything resembling what we would take to be an expression's meaning rests and draws upon an elaborate, multifaceted conceptual substrate, with no specific line of demarcation being possible. Conversely, any particular meaning we ascribe to a sentence presupposes some context—either the actual context or some imagined one. If a certain meaning appears to be acontextual, this is only because the contextual features presupposed represent defaults. (Langacker 2003, 195)³²

Consequently, debates over 'dictionary' meanings may not always have cut-and-dried answers. This particularly applies to debates over the *granularity* of a dictionary definition—whether a broad sense should be broken into several fine-grained senses.³³

At this point, a word of caution is needed on the notion of 'fuzziness.' Many current linguists, on the basis of Eleanor Rosch's exploration of prototype effects (Rosch 1978), assert that cognitive categories (including word senses) have fuzzy boundaries.³⁴ It is claimed that at the periphery of the category, there may be uncertainty over whether a potential member is 'inside' or 'outside.' This is particularly the case with natural categories; for example, is a *cyberpet* a 'real' *pet*? Is a *tomato* a FRUIT or a VEGETABLE? Different subjects may give different judgments, or may vary in their judgment between different contexts, or may simply be unable to decide. Similarly, to return to our previous example, does a blue, peppermint-flavoured, made-from-apples drink constitute *apple juice*? To take one of Lakoff's examples, where is the cut-off point for defining a *tall man*?³⁵ Cases like these all suggest categories with fuzzy borders.

³² While Langacker speaks of expressions and sentences, his comment is equally true for word meanings.

³³ Cf. Andersen and Forbes 1989, 8; Boas 2003, 175 n. 18; van der Merwe 2006b.

³⁴ In BH studies, this line has recently been advocated by van Steenberg (2002c, 28, 34, 133–35; 2002b, 116) and van der Merwe (2006a; 2006b, 88); and while he is not a biblical scholar, see Taylor's comments in van Wolde's edited volume on *Job 28* (Taylor 2003, 174).

³⁵ Lakoff 1987; cited in Croft and Cruse 2004, 95.

However, although these are all valid examples for studying prototype effects, Cruse has cautioned against hastily concluding that categories have fuzzy boundaries. In Cruse 2004, while he accepts fuzzy category borders, he points out that not all categories have fuzzy boundaries: consider, for example, the ODD NUMBERS category. And even where a category is said to have a fuzzy boundary, this boundary is nonetheless important for understanding the category: “even fuzzy boundaries have locations, which are in principle specifiable” (2004, 135). More importantly, he warns against confusing prototypicality with (degree of) category membership. Thus, while some non-prototypical members may have uncertain category membership status, this is not always the case: many non-prototypical category members have unambiguous, full category membership, and do not lie in a fuzzy border region (2004, 135–36). A MAGAZINE may be a debatable member of the BOOK category, in a fuzzy boundary region; however, an OSTRICH is immediately and universally accepted as a ‘fully-fledged’ member of the BIRD category.³⁶

In Croft and Cruse 2004 (91–95), he goes further, and questions even the existence of fuzzy boundaries.³⁷ He argues instead that, for many categories, *boundary placement* is itself a matter of dynamic construal, so that different contexts will encourage different placements, and any two language-users will differ slightly in their construal of boundary placements. It is true that subjects are sometimes uncertain about category membership; but often this uncertainty is based on the premise that there is in principle a sharp boundary. However, this variation in construal does not imply that, for any *one construal*, there is anything ‘fuzzy’ about the boundary. Similarly, Löbner lists a number of sources of apparent fuzziness apart from

³⁶ In the terms used in psychological studies of prototype effects, this means that a ‘Goodness-of-Exemplar’ (GOE) rating for a potential category member does not necessarily imply an equivalent rating for its ‘degree of membership’ (DOM) in the category (Croft and Cruse 2004, 77–79). Both MAGAZINE and OSTRICH would have low GOE ratings in the given categories; yet they have very different DOM ratings (low for MAGAZINE in BOOK, high for OSTRICH in BIRD). Van der Merwe (2006b, 88) confuses GOE and DOM: “Categories tend to have fuzzy borders, e.g., they may include items that are regarded as good examples of a category and those that are less typical”; and similarly, van Steenbergen 2002b, 116.

³⁷ Similarly, see Grandy 1992, 113. There seems to be some discrepancy between the accounts in Cruse 2004 and Croft and Cruse 2004 (the relevant section of which was written by Cruse), but both are nonetheless helpful.

meaning variation—such as ignorance and pragmatism—which discount many purported examples (Löbner 2002, 188–90). Whether these arguments entirely invalidate fuzzy boundaries is debatable; but caution is certainly warranted.

4. *Semantic frames*

The notion of **semantic frames**, pioneered by Charles J. Fillmore, fits well into Croft and Cruse's broad cognitive model, and is presented by its advocates as an improvement on semantic fields.³⁸ Appealing to semantic frames avoids the illusion of *direct* relationships between words, and grounds these relationships in conceptual structures—conceptual 'frames' or 'domains'.³⁹ Fillmore and Beryl T. Atkins explain it thus:

Semantic analyses within field theories posit systems of paradigmatic and syntagmatic relationships connecting members of selected sets of lexical items. A major activity for lexical semanticists influenced by the field theory notion is that of cataloguing the kind of interitem relations that can be defined for the elements of a lexicon, and characterizing the kinds of lexical sets that are structured in terms of such relationships.

Semantic theories founded on the notion of *cognitive frames* or *knowledge schemata*, by contrast, approach the description of lexical meaning in a quite different way. In such theories, a word's meaning can be understood only with reference to a structured background of ex-

³⁸ See ch. 5 for references to the literature, particularly n. 9 on p. 108. Note that I will use 'semantic frames' (or simply 'frames') to refer to the conceptual structures at the heart of the various theories advanced by Fillmore, Croft and many others, 'frame semantics' to refer collectively to theories which use semantic frames/domains as a major organising principle, and (capitalised) 'Frame Semantics' to refer to Fillmore's theory in particular.

³⁹ While the terms 'frame' and '[cognitive] domain' are now often used interchangeably in cognitive linguistics to refer to a given conceptual framework or "background knowledge structure" (Clausner and Croft 1999, 2), both are potentially ambiguous. 'Domain' is used in traditional field theory to refer to a group of associated lexical items. 'Frame' was used, particularly in older works, in a more restricted sense, inherited from Artificial Intelligence, to denote a dynamic process or 'script' with a sequence of events. (A 'frame' in current Frame Semantics is much broader, yet still incorporates 'scripts' as complex event frames containing subframes: Ruppenhofer et al. 2006, §6.1.1.) The main difference now is that they are associated with different pioneering scholars in cognitive linguistics: Fillmore uses 'frames,' while both Langacker and Lakoff use 'domains.' I will generally use 'frame,' though consider them interchangeable (cf. Croft and Cruse 2004, 15–17).

perience, beliefs, or practices, constituting a kind of conceptual prerequisite for understanding the meaning. Speakers can be said to know the meaning of a word only by first understanding the background frames that motivate the concept that the word encodes. Within such an approach, words or word senses are not related to each other directly, word to word, but only by way of their links to common background frames and indications of the manner in which their meanings highlight particular elements of such frames. (Fillmore and Atkins 1992, 76–77, emphasis original)

Field theory and semantic frames actually have much in common, since both organise words into groups that are associated by experience. The crucial difference is that in lexical field theory, “words are defined relative to other words in the same lexical field, whereas in frame semantics, words are defined directly with respect to the frame” (Croft and Cruse 2004, 10). Moreover, a frame is much more than a field: it is not simply a collection of words in various (primarily paradigmatic) relationships, but a rich, *structured* conceptual framework, arising from life experience.

There are powerful arguments for something like a ‘frame’ approach to semantic analysis—one which pays attention to the complex interrelation of underlying concepts which is evoked and presupposed by words and expressions. A classic example is the word *restaurant*, and the concept RESTAURANT which it symbolises and evokes. The concept RESTAURANT is closely tied to many others, such as CUSTOMER, WAITER, ORDERING, EATING, and BILL; yet there are no structural-semantic relations involved (such as hyponymy or antonymy). These concepts are related purely by ordinary, structured human experience; yet these relationships are integral to our understanding of *restaurant*.⁴⁰

Croft and Cruse discuss a wide range of other semantic phenomena which, they argue, cannot be adequately explained without recourse to a complex underlying conceptual framework.⁴¹ For example, we saw in chapter 2 (page 26) that *girl*, *boy*, *woman*, and *man* cannot simply be explained in terms of sense-components, such as [+CHILD][+FEMALE], [+CHILD][−FEMALE], and so on. Instead, we need some sort of frame-based account.

⁴⁰ Cf. Croft and Cruse 2004, 7.

⁴¹ The following examples are drawn from Croft and Cruse 2004, 8ff.

In a frame semantics analysis, *man*, *boy*, *woman* and *girl* evoke frames that include not just the biological sexual distinction but also differences in attitudes and behavior towards the sexes that would explain the traditional asymmetry in the use of *boy/girl* and the more recent change in the use of *woman*, including its hypercorrective use. (Croft and Cruse 2004, 9)

Similarly, the variety of oppositions used in English to describe vertical extent is puzzling on a field analysis. Why are humans *tall* or *short*, while objects measured by distance from a baseline (such as a tree branch) are *high* or *low*, and buildings are *tall* or *low*? This is no difficulty for the frame approach, since these oppositions are not autonomous lexical relationships, but operate within various frames (for humans, buildings, and other objects). Within a particular frame, it is possible to specify the opposites used for vertical extent. Indeed, in some frames only one item from the expected antonymous pair is normally used: compare *low-flying aircraft* and *high-flying businessman* with *?high-flying aircraft* and *?low-flying businessman*.

While field theory defines the meaning of a word in contrast with neighbouring words in its field, there are cases where this is very difficult, because there are no contrasting words. Croft cites the case of the word *hypotenuse* in English, in which (unlike in German) there are no terms for the other two sides of a right-angled triangle. Nevertheless, the meaning of the English and German terms is identical, since (by a frame semantic account) “the word concept is linked directly to the frame, in this case the RIGHT ANGLE TRIANGLE frame” (Croft and Cruse 2004, 10). It could be argued that in English, *hypotenuse* is related to the complex expression *right-angled vertex*; however, the relationship is a *spatial* one—a relationship which makes no sense apart from a particular mental conception of the shape of a right-angled triangle. This mental conception must be in some way extrinsic to the meaning of *hypotenuse* itself, since the concepts HYPOTENUSE and RIGHT-ANGLED TRIANGLE are not the same.

In fact, there are many word concepts which inherently refer to other concepts extrinsic to the word concept itself. Croft cites words which presuppose a prior history (*scar*, *widow*); words which presuppose understanding of a particular aspect of their possessor (*gallop* → the body of a horse, *hungry* → the physiology of living things, *lap* → a person’s posture and the supporting function); and perhaps most importantly, words whose concepts “cannot be understood apart from the intentions of the participants or the social and cultural institu-

tions and behavior in which the action, state or thing is situated” (Croft and Cruse 2004, 11). For example, *vegetarian* only makes sense in the context of a culture in which meat-eating is common.

The heart of a frame-based approach to semantics, then, is relationships between concepts—particularly that between a **profile** and its **base**.⁴² The profile is “the concept symbolized by the word in question,” and its base is “that knowledge or conceptual structure that is presupposed by the profiled concept” (Croft and Cruse 2004, 15). For example, HYPOTENUSE is based on, or presupposes, the RIGHT-ANGLED TRIANGLE frame, with its conception of three sides spatially coordinated in a particular way. Similarly, to understand the concept RADIUS (and hence the word *radius*) requires prior knowledge of the CIRCLE concept.⁴³ In fact, both *hypotenuse* and *radius* profile nothing more than a straight line; the difference lies in the bases against which they are profiled (cf. Taylor 2002, 193–94).

Croft defines ‘frame’ in terms of this profile-base relationship: a frame is “A SEMANTIC STRUCTURE THAT FUNCTIONS AS THE BASE FOR AT LEAST ONE CONCEPT PROFILE (typically, many profiles)” (Croft and Cruse 2004, 15, emphasis original).⁴⁴ These two conceptual entities—a profile and its frame—are simultaneously evoked, for either the addresser or the addressee, when a word is used.⁴⁵

⁴² The terminology comes from Langacker (1987a, 1987b, 1991), who explores profile-base relationships in great depth. Cf. also Taylor 2002, chap. 10; Evans and Green 2006, 538–44.

⁴³ Note the various uses of the word ‘profiled’ in frame semantics terminology: RADIUS is “profiled against” (or “in”) the CIRCLE frame. The verb ‘profile’ is also used for the relationship between a word form and its word concept; e.g., “English *river* profiles a more or less permanent flow of water in a natural channel, presupposing a frame specifying the relevant topographical features” (Croft and Cruse 2004, 20).

⁴⁴ In Croft’s usage, ‘base’ and ‘domain/frame’ are almost interchangeable—a base is a frame. For Langacker and Taylor, a base and a domain are different conceptual entities: “The **base** of an expression is the conceptual content that is inherently, intrinsically, and obligatorily invoked by the expression. A **domain** is a more generalized ‘background’ knowledge configuration against which conceptualization is achieved” (Taylor 2002, 195, emphasis original). In Croft’s account, this distinction is captured by the complex networks of frames which constitute conceptual structure (see below). I will follow Croft’s use of terms.

⁴⁵ This is not to assume that the profile and base evoked will be the same for addresser and addressee. There will almost inevitably be at least small differences, due to different life experiences, perspectives, etc. However, the relative success of the majority of communication indicates that most of the time the differences are fairly minor.

Thus, the relationship between a word form, its corresponding concept (or profile), and its presupposed frame can be represented as in figure 3.1 (illustrated with the word *radius*).

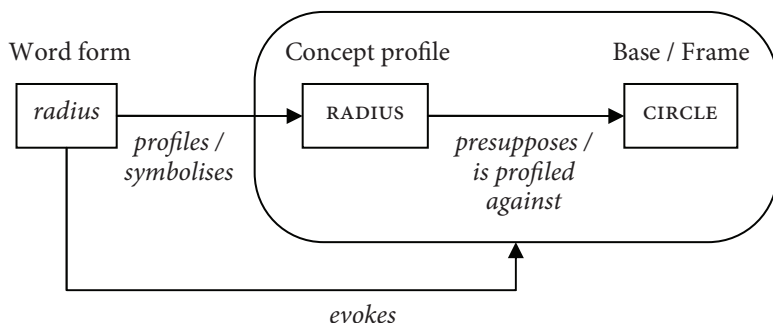


Figure 3.1 Relationship between a word form, profile, and frame

A base or frame is a complex conceptual structure, which usually profiles a wide range of concepts (for example, RADIUS, ARC, DIAMETER, CENTRE, SEGMENT). Moreover, a base may in turn be profiled against another frame—or several frames. For example, HUMAN BEING presupposes a number of frames, including those of physical objects, living things, and volitional agents.⁴⁶ The result is a complex network of interrelated concepts, called a *domain/frame network* or *matrix*.⁴⁷

This network of profile-base relationships must eventually bottom out, with frames that are not profiled in any other, more ‘basic,’ frame. These are frames associated with “directly embodied human experience” (Croft and Cruse 2004, 24); or in Langacker’s terms, they are “irreducible realms of experiential potential” (Langacker 2000b, 2).⁴⁸ Langacker calls these *basic domains*, as opposed to *abstract domains* (Langacker 1987a, 147–50); and I will similarly distinguish between basic and abstract frames. Basic frames at least include those

⁴⁶ Cf. Croft and Cruse 2004, 25.

⁴⁷ “Any given word provides access to a rich network of conceptual knowledge; specific uses of a word shine a spotlight, as it were, on portions of the conceptual network” (Taylor 2003, 177).

⁴⁸ Cf. Lakoff’s discussion of preconceptual structures, both basic-level and image-schema (Lakoff 1987, 302).

for SPACE, MATERIAL, TIME, FORCE, as well as a host of bodily sense perceptions (COLOR, HARDNESS, LOUDNESS, HUNGER, PAIN, etc.).⁴⁹

The complexity of frame matrices simply mirrors the complexity of human cognition. As Croft points out, “no concept exists autonomously: all are understood to fit into our general knowledge of the world in one way or another” (Croft and Cruse 2004, 16). For the purpose of lexical analysis, however, the most important relationship is that of profile and base. Croft argues that a linguistic concept cannot be described by the profile alone, nor by its base alone. Rather, “THE MEANING OF A LINGUISTIC UNIT MUST SPECIFY BOTH THE PROFILE AND ITS BASE” (Croft and Cruse 2004, 15, emphasis original). Langacker makes the same point: “The semantic value of an expression resides in neither the base nor the profile alone, but in their combination” (Langacker 1987a, 183).

Though he does not use the term ‘profile,’⁵⁰ Fillmore nevertheless illustrates this principle by comparing the near-synonyms *land* and *ground*. In this case, the profiled concepts (in their default construal) are virtually identical, but they are profiled against different frames: *land* is profiled against the dry surface of the earth, in contrast with *sea*; while *ground* is profiled against the solid surface of the earth in contrast with *air*. “The words ‘land’ and ‘ground,’ then, differ not so much in what it is that they can be used to identify, but in how they situate that thing in a larger frame” (Fillmore 1982, 121).⁵¹

At this point, the promise of frame semantics for the study of BH semantics may begin to be appreciated. Consider, for example, the צדק family of terms (צִדִּיק, צִדְקָה, צִדִּיק, etc.), usually translated “be righteous,” and so on. A number of the questions that have plagued discussion of צדק terms are obviously frame-related questions. When should we construe an ethical meaning, and when a narrow forensic meaning? Do the terms always pertain to social relationships or be-

⁴⁹ Langacker refers to abstract frames as “complex categories”; and his umbrella terms for basic domains and more complex conceptualisations is “cognitive domain” (Langacker 2000b, 4).

⁵⁰ Though see Fillmore and Baker 2010, 317.

⁵¹ Fillmore (and similarly Croft and Cruse 2004, 18) is slightly unhelpful in describing GROUND as “the *dry* surface of the earth as it is distinct from the AIR above it” (emphasis mine), rather than “the *solid* surface of the earth” (hence, *solid ground*). Interestingly, while aeroplanes may be *grounded*, on the other hand they also *land*. Thus, in their default construals, *land* (the verb) in this sense is profiled against a different frame from that of *land* (the noun)!

haviour? Is צדקה/צדק a covenantal term or a creational term?⁵² Is it about correspondence to an external norm or fidelity to a relationship?⁵³ These questions relate not simply to the concept profiles, but to the frames against which they are profiled—the conceptual structures into which they fit, including presupposed beliefs and related concepts.

To take the ‘covenantal vs. creational’ question, consider the proposal that biblical **RIGHTEOUSNESS** is a covenantal concept—and, to take the strongest version, that צדקה means “loyalty to the covenant” or “covenant behaviour.”⁵⁴ We could re-express this in frame-semantic terms as follows: that צדקה is profiled against the **COVENANT** frame (that is, the frame primarily evoked by ברית); or less directly, that the frame evoked by צדקה is itself profiled against the **COVENANT** frame.

However, to test this proposal, we would need to consider a number of other possibilities—namely, that the concept profiles of צדקה and ברית are both profiled against another common base; that the two concept profiles are, in fact, not related in a profile-base or sibling relationship; or, to take the converse of the above proposal, that the frame evoked by ברית is profiled against the **RIGHTEOUSNESS** frame, that is, the frame primarily evoked by צדקה. To contrast the two extremes, then, we might ask, Is צדקה a **COVENANT** term, or is ברית a **RIGHTEOUSNESS** term? These are the types of questions for which a frame-related approach holds great promise.

In light of the work of Gerrit van Steenbergen (2002a, 2002b, 2002c, 2003), it should be noted that frame semantics is entirely compatible with approaches that emphasise culture and worldview as indispensable aspects of semantic analysis. This is evident from various descriptions of frames in the literature, for instance, as “schematic representations of the conceptual structures and patterns of beliefs, practices, institutions, images, etc. that provide a foundation for meaningful interaction in a given speech community” (Fillmore, Johnson, and Petruck 2003, 235). Thus, a conceptual frame can be viewed as a single (though not autonomous) unit within the “cognitive organization of a culture” (van Steenbergen 2002c, 51).

⁵² Cf. Seifrid 2001, 2004.

⁵³ Cf. Cremer 1915, 300; *TDOT* XII.243–44.

⁵⁴ Cf. Ziesler 1972.

5. *Dynamic construal, frames, sense, and sense relations*

The dynamic construal approach to semantics, and Frame Semantics in particular, posits some qualifications to the traditional structuralist account of sense and sense relations.

First, D. Alan Cruse, in his more recent book on lexical semantics (Cruse 2004), contrasts Lyons's structuralist definition of 'sense' with a cognitive understanding.⁵⁵ The sense of a word is not constituted by its sense relations, but rather (at least partly) by "some kind of mental representation of the type of thing that it can be used to refer to" (Cruse 2004, 27).⁵⁶ Furthermore, Cruse assumes "that the main function of linguistic expressions is to mobilize concepts, that concepts are the main constituents of sense, and that sense (and hence concepts) constrains (even if it does not directly determine) reference" (2004, 27).⁵⁷

In other words, expressions (including lexemes) are not related directly to one another, but rather, "sense relations are relations between concepts" (Cruse 2004, 145). Expressions are related via underlying mental structures, that is, via the conceptual frames which they evoke. As well as being more theoretically satisfying, this viewpoint encourages an account of inter-lexical relations that focuses on the peculiarities and structures of the *particular* conceptual frames involved, and their interrelationships, rather than on broad semantic generalisations.

Secondly, sense relations are "not between words as such, but between particular contextual construals of words" (Croft and Cruse 2004, 141). Consequently, sense relations are not invariable components of the language system, but are themselves a matter of dynamic construal, dependent on particular construals of the constituent

⁵⁵ Indeed, Cruse's account contrasts with his own earlier structuralist explanation (Cruse 1986, 15–16; cf. Taylor 2002, 192–93).

⁵⁶ This also challenges 'real-world' approaches, in which the meaning of an expression is the real-world state of affairs to which it relates (n. 3 on p. 13 above). Just as there are no *direct* relationships between words, so there are no *direct* relationships between words and the real world: rather, all such relationships are mediated by the "entities in mental space" (Taylor 2002, 189) to which linguistic expressions actually refer; see also Langacker 1991, 55–56.

⁵⁷ If the notion of sense is anchored in this way to concepts and "mental representation," then, once again, encyclopaedic aspects of meaning must inevitably encroach on lexical meaning.

words.⁵⁸ For example, the difference between antonyms and complementaries is not primarily related to their underlying real-world properties, but to the way these properties are perceived or construed. With antonyms, their underlying property is *construed* as gradable, whereas with complementaries, it is *construed* as either present or absent.

Indeed, there are some pairs of opposites (such as *clean:dirty*) which seem to shift, subject to all the usual constraints, between complementarity, antonymy, and a hybrid category in which one is construed as absolute and the other as gradable. In the horror film genre, LIFE and DEATH are not construed as exhaustively dividing the conceptual domain, so that *neither dead nor alive* becomes perfectly acceptable. An example of the hybrid construal, taken from Cruse (Croft and Cruse 2004, 168), is the following:

- (1) A: Is John dead?
B: No, he's very much alive.

Similarly, syntagmatic relations are a matter of construal. For example, a description of the verb *drink* might state that it requires a living agent as its subject, and a viscous substance as its object. The actual requirement, however, is that its subject and object must be capable of being *construed* as (respectively) agentive and viscous. Thus, in the following sentence the meaning of *drank* prompts a figurative interpretation of *the earth* as an agent:

- (2) The parched earth drank the rain.

Similarly, the meanings of the verbs *pour* and *wash over* require subjects that can be construed as viscous;⁵⁹ hence, consider the following examples:

- (3) a. The rubble poured down the embankment.
b. Grief washed over her.

In sentence (a), the construal involves relaxing the prototypical notion of a pourable substance; in sentence (b), it invokes the AN EMOTION IS A LIQUID metaphorical mapping to construe *grief* as liquid substance.

⁵⁸ Cf. Croft and Cruse 2004, 141ff.; Cruse 2004, 269–71.

⁵⁹ Cf. Boas 2003, 176 n. 19.

6. *Metaphor, mental spaces, and frame blending*

One of the areas in which cognitive linguistics has contributed greatly to linguistic understanding is in its analysis of metaphor and, more recently, metonymy.⁶⁰

6.1. *Cognitive Metaphor Theory*

What is sometimes known as **Cognitive Metaphor Theory** (CMT), which came principally from the work of George Lakoff, Mark Johnson, and Mark Turner (Lakoff and Johnson 1980; Lakoff 1987; Lakoff and Turner 1989),⁶¹ rests on the notion of frames/domains. “Metaphor is characterized as the conceptual phenomenon whereby a *target domain* is structured and understood with reference to another, more basic *source domain*” (Langacker 2000b, 3).⁶² The **target domain** is thus “the domain the sentence is actually about,” but the terms in which it is described evoke a separate **source domain**, very often drawn from the physical world or some aspect of human experience.

Consider sentence (4) below, a fairly simple example from the HB. The target domain is the MORAL WILL of (in this case) the exiles in Babylon (vv. 15, 24)—a domain evoked by the common meaning of לֵב as “the locus of the moral will” (Block 1997–1998, I.353). The source domain is that of PHYSICAL SUBSTANCES.⁶³

⁶⁰ Although I will focus on metaphor rather than metonymy, we need a basic understanding of the distinction between the two. Simply put, metonymy is based on “inherent” or “essential experiential connections” between concepts, whereas “*metaphor and analogy* reflect the universal human ability to link domains on the basis of experiential connections of many different sorts,” without an intrinsic metonymic connection (Sweetser and Fauconnier 1996, 4, emphasis original). In frame terms (to be explained shortly), metaphor involves the *blending* of two otherwise unrelated input frames, whereas metonymy involves either a single frame or two frames connected in a frame matrix, with no blending between the frames (cf. Croft and Cruse 2004, 193, 216–20; Ruiz de Mendoza Ibáñez 2000, 113). In fact, these describe the extremes of clear metonymy and metaphor: some figurative language resides somewhere in between the two (Radden 2000).

⁶¹ For recent summaries, see Croft and Cruse 2004, 193–221 and Evans and Green 2006, 286–327.

⁶² Cruse uses the terms ‘vehicle’ and ‘target’ as alternatives to ‘source domain’ and ‘target domain,’ respectively (Croft and Cruse 2004, 194).

⁶³ The [SUBSTANCE] frame in FrameNet 1.3 (<http://framenet.icsi.berkeley.edu/>) would be suitable here. Its definition states: “This frame concerns internally undifferentiated Substances.”

- (4) וְהִסְרֹתִי לֵב הָאֲבָן מִבְּשָׂרָם וְנָתַתִּי לָהֶם לֵב בָּשָׂר

<i>wa-hă-sîrô-tî</i>	<i>lēb</i>	<i>hā-'eben</i>
CO-CAUS-turn.aside-1SG DEP	heart CNST	ART-stone
<i>mib-běšār-ām</i>	<i>wě-nātat-tî</i>	<i>lā-hem</i>
ABL-flesh CNST-3MPL.POSS	CO-give-1SG DEP	DAT-3MPL
<i>lēb</i>	<i>bāšār</i>	
heart CNST	flesh	

“I will remove the heart of stone from their flesh and give them a heart of flesh” (Ezek 11:19b)

In CMT, metaphors are typically described using the formula TARGET DOMAIN IS SOURCE DOMAIN. For instance, the sentences in (5) are based on the metaphor A PERSON IS AN ANIMAL (Ruiz de Mendoza Ibáñez 2000, 112).

- (5) a. He is a pig.
 b. She is a dragon.
 c. He dogged me all day.
 d. He left with his tail between his legs.

However, metaphors are invariably more complex than the simple formula. The meaning of a metaphor depends on the existence of, or rather the ability to construe, a set of **mappings** or **correspondences** between the source and target domains. Thus, in the examples above, the imagery invites us to search for contextually appropriate ways in which the person might be pig-like, or dragon-like, or behaving as dogs do.

Returning to Ezekiel 11:19b, merely equating the target and source domains is rather too simple. The nature of the mapping draws a correspondence between the *characters* of the equated entities—the moral character of the person and the physical character of the substance. Thus, we could express the metaphor as: THE CHARACTER OF A PERSON’S MORAL WILL IS THE NATURE OF A PHYSICAL SUBSTANCE.

This metaphor mapping is applied twice in Ezekiel 11:19b; indeed, the meaning of the whole is produced by a comparison of the individual metaphors, while our interpretation of each also depends in part on creating a meaningful contrast. In particular, the expression *lēb bāšār* “a heart of flesh” would not have the same force on its own: in its “physical organ” sense, a *lēb* is always *bāšār*. The interpretive key is the marked physical difference between *’eben* “stone” and *bāšār* “flesh”: *’eben* is hard, unyielding, and lifeless, while *bāšār* is comparatively soft, malleable, and (construed here as) living. This contrast

enables us to find a meaningful correspondence between the source and target domains. We understand the present spiritual disposition of the exiles to be lifeless, that is, entirely devoid of right moral character, and stubbornly unchanging and unresponsive to God. Indeed, the expression “the heart of stone from their *flesh*” suggests an entirely alien entity within their otherwise human selves—or conversely, that they lack within their human *bāsār* a core element of genuine humanness. The promised change will see them infused with a vibrant moral character and a compliant, responsive disposition towards God and his will, which amounts to a fully restored humanity.

6.2. *Mental spaces and Blending Theory*

This interpretation may seem to claim a great deal. However, that is the power of metaphor: the search for a mapping between the two domains often results in a meaning beyond the sum of the parts. This is illustrated by the following example:⁶⁴

(6) This surgeon is a butcher.

Nothing in either source or target domain, on its own, would suggest a negative sense. In particular, nothing in our normal perception of *butchers* suggests that they are careless and dangerously incompetent; yet this is precisely what the metaphoric blend of the two domains implies about the *surgeon*.⁶⁵

Indeed, the key word here is *blend*. The original CMT of Lakoff and others has been more recently improved by combining it with Gilles Fauconnier’s theory of **mental spaces** (Fauconnier 1985, 1997, 2004a; Fauconnier and Turner 1998; Sweetser and Fauconnier 1996; Dancygier and Sweetser 2005), which includes the important notion of frame/domain blending (Fauconnier 1997, chap. 6; Fauconnier and Turner 2002).

Fauconnier describes mental spaces as follows:

Mental spaces are small conceptual packets constructed as we think and talk for purposes of local understanding and action. They are partial as-

⁶⁴ The example has been discussed by a number of authors; see, for instance, Grady, Oakley, and Coulson 1999, Vega Moreno 2004, Croft and Cruse 2004, 208–9, and Brandt and Brandt 2005.

⁶⁵ See the cited literature for explanations. For a more intricate and entertaining example, see Turner and Fauconnier’s (2000, 133–35) analysis of the attested sentence *If Clinton were the Titanic, the iceberg would sink*.

semblies containing elements and are structured by frames and cognitive models. They are interconnected and can be modified as thought and discourse unfold. (Fauconnier 2004b, 662)

Fauconnier and Turner initially explored mental spaces with respect to a wide range of phenomena, often associated with ‘space builders’—expressions that either open a new partial, short-term mental space based on and linked to an existing discourse-active space, or shift the focus to an existing space (Fauconnier 1997, 40).

Mental spaces were specifically applied to CMT by Grady, Oakley, and Coulson (1999), with what they dubbed the **Blending Theory** (BT) of metaphor.⁶⁶ Crucially, where earlier cognitive metaphor theory had operated with two domains and correspondences between these, blending theory typically posits (at least) four mental spaces. The source and target domains of CMT are retained as *input spaces*, along with the correspondences between these; but to these are added a *generic space* and a *blend space*. The generic space consists of the intersection of the input spaces, that is, the conceptual structure that they share, while the blend space consists of the combination of the input spaces, where elements from each interact with each other.

The result of this interaction, according to mental space theory, is that the blend space will have an ‘emergent structure’ with inferences not predictable from the individual source frames (Fauconnier and Turner 1998).⁶⁷ We saw this with the surgeon-butcher in (6), and it is also the case with Ezekiel 11:19b in (4). First, note that the metaphor utilises an entrenched *metonymic* sense (or range of senses) of *lēb* “heart”: the folk belief that the organ was the seat of one’s thoughts, attitude, will, and conscience led to the direct use of *lēb* to signify these abstract personal characteristics. The frequency of this sense strongly suggests that in many cases the metonymic link to the organ itself would have been faint at best.

In Ezekiel 11:19b, the use of *lēb* with physical substances reactivates the link to the base sense of *lēb* as an organ. However, unlike in this BODY PART source frame, the *lēb* in the blend space can be made of a material other than flesh. Moreover, the blend produces the im-

⁶⁶ Cf. Coulson 2001; Brandt and Brandt 2005; Fauconnier and Turner 2008. For an excellent and concise presentation of BT with respect to a metaphor from the HB, see Van Hecke 2005a.

⁶⁷ This is Langacker’s general principle of “partial compositionality” (Langacker 2000a, 4–5).

plication that *the material from which a person's heart (organ) is made determines the character of the person's moral will*. Once again, this is not predictable from the individual input domains.⁶⁸

6.3. CMT and conventionalised metaphors

So far, I have focused on metaphors that are not fully established or conventionalised—that is, relatively novel or ‘living’ metaphors. The most revolutionary claim of CMT relates to the other end of the spectrum: metaphors that are so conventionalised and entrenched that they are almost never recognised as metaphors at all. Rather than simply dismiss these as ‘dead’ metaphors, Lakoff and his associates insisted that conventionalised metaphors are extremely common in everyday language, and fundamental not only to our communication but to our cognitive processes. It is now widely accepted that “our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature” (Lakoff and Johnson 1980, 3). Indeed, when it comes to ideas not directly connected to physical experience, we simply cannot conceive of them other than through metaphoric processes. These are “the metaphors we live by” (Lakoff and Johnson 1980). Lakoff argues:

In domains where there is no clearly discernible preconceptual structure to our experience, we import such structure via metaphor. Metaphor provides us with a means for comprehending domains of experience that do not have a preconceptual structure of their own. . . . Comprehending experience via metaphor is one of the great imaginative triumphs of the human mind. (Lakoff 1987, 303)

Lakoff divides preconceptual structures into two types: *basic-level* structures, which include categories such as hunger, pain, water, wood, stone, people, cats, and so on, and *image schemas*, which are schematic patterns arising from physical experience, such as source-

⁶⁸ As an aside, one of the strengths of CMT, particularly its BT enhancement, is that it is compatible with Aristotle's enduring explanation of the metaphor, as described by Umberto Eco (1984, 87–129). In discussing the examples *the leg of the table* and *the neck of the bottle*, Eco describes the metaphoric process in BT-like terms: “two images are conflated, two things become different from themselves, and yet remain recognizable, and there is born a visual (as well as conceptual) hybrid” (96). Moreover, Eco underscores the cognitive nature of metaphor, and even suggests that Aristotle, albeit unwittingly or confusedly, preempted this ‘discovery’ of cognitive linguistics (99–103).

path-goal, container-content, centre-periphery, linkage, force, and balance.⁶⁹

The claims of Lakoff and others explain why so many conventionalised metaphors are not simply isolated linguistic phenomena, but exist within a set of expressions with the same figurative mapping structure, and to which novel examples can easily be added. Two well-known and productive mappings of this kind are the *LIFE IS A JOURNEY* (7) and *A THEORY IS A BUILDING* (8) metaphors. The *STATES ARE CONTAINERS* mapping in (9) imposes a particular image-schematic structure on the target domain.⁷⁰

- (7) a. He's at a crossroads in his life.
b. She got a head start in life.
c. I can't ever seem to get where I want to in life.
- (8) His theory is shaky and rests on weak foundations. Unless he can shore it up, the critics will demolish it.
- (9) a. They're in love.
b. How do we get out of this mess?
c. He fell into a deep depression.

Thus, many metaphors turn out to be derived from schematic, productive, and deeply-ingrained conceptual mappings.⁷¹ We almost never consciously choose to use these, but rather, as Marcel Danesi explains:

A conventionalized metaphor is automatic, effortless, and established by the community. To say that ideas are geometrical objects—that they are *parallel*, *diametrically opposite*, etc.—is a reflex discourse pattern that we have acquired from our culture. (Danesi 1997, 34)

⁶⁹ Lakoff 1987, 302; Langacker 2000b, 3. Clausner and Croft (1999, 14) argue that image schemas are a subtype of domain, namely, “image schematic domains.” Moreover, image schematic domains are both basic and schematic, relating to the *patterns* that “recur in a variety of embodied domains and structure our bodily experience.”

⁷⁰ Examples adapted from Evans and Green 2006, 299–300; Langacker 2003, 212–13; Croft and Cruse 2004, 196. On image schemas and domains, including the role of image schemas in metaphors, see Clausner and Croft 1999. Several scholars have pointed out deficiencies with Lakoff and Johnson's formulation *A THEORY IS A BUILDING*. Taylor (2002, 497), adapting the proposal of Clausner and Croft (1997), reformulates it as: *THE VALIDITY OF AN ARGUMENT IS THE STRUCTURAL INTEGRITY OF A BUILDING*.

⁷¹ In fact, Lakoff, Turner, and Johnson have gone further than this, suggesting that “it could be the case that every word or phrase in a language is defined at least in part metaphorically” (Lakoff and Turner 1989, 119).

Moreover, many such mappings seem to occur in a range of culture and language groups, which suggests that they arise from innate and universal aspects of human cognition. We will see examples of this in chapter 9, though more work is required in this area.⁷² Nevertheless, current cross-linguistic research into metaphors, using CMT and BT, is potentially of great benefit for semantic research in BH. Where there is wide cross-linguistic support for a given conceptual mapping, we may reasonably look to see if it is also evident in BH. This provides us with 'leads' in the quest to analyse polysemy and semantic shift, and may help in formulating explanations for the same.

6.4. *Conventionalised metaphors, novel metaphors, and lexicology*

Finally, it should be noted that Lakoff et al. concentrate their analyses on conventionalised, entrenched metaphors which are mostly subconscious; and while these analyses are valuable, Cruse criticises the creators of CMT for neglecting *novel* metaphors, which he argues are crucial for understanding "the heart of metaphor as an interpretive mechanism" (Croft and Cruse 2004, 204). At the very least, we must recognise the differences between novel and conventionalised metaphors, and the way they are mentally processed. This is particularly important in the field of lexical semantics. Indeed, I suggest distinguishing at least three phenomena.

The first is that of schematic, deeply-ingrained *conceptual mappings* (including image schemas), which are subconsciously active in the minds of speakers in a language community. These provide part of the conceptual substrate for particular metaphors-in-use.

The second phenomenon is the category of *novel metaphors*.⁷³ By this, I mean instances of language use in which more than one frame is evoked, and in which the hearer must *search* for a set of correspondences that will allow a meaningful blend of the source and target frames. This is the kind of metaphor we examined in relation to BT above. The key here is the dynamic *process* involved in constructing the metaphorical sense from a more entrenched sense.⁷⁴

⁷² Cross-linguistic testing is beginning, e.g., Slingerland 2005 and (more cautiously) Cienki 2005; but for contrary perspectives, see Queller 2003 and Rice 2003.

⁷³ These are traditionally called 'living metaphors,' or sometimes 'poetic metaphors' (Crystal 2003, 80).

⁷⁴ Cf. John Lyons' description of the process of metaphorical interpretation as a "search," in which (by Grice's maxims of co-operative interaction) the addressee is

The third phenomenon is the category of *conventionalised metaphors*, which are the particular figurative expressions usually discussed in CMT literature.⁷⁵ A conventionalised metaphor is an utterance which in some ways resembles a novel metaphor: a conceptual mapping can be identified which at least partly explains its meaning, and it will often have an alternative, seemingly less figurative sense.⁷⁶ Indeed, conventionalised metaphors begin their lives as novel metaphors, and probably always remain connected (albeit subconsciously) to the relevant mapping.⁷⁷ The key difference, however, is that the meaning of a conventionalised metaphor is *directly retrieved* (along with its frame) from the mental lexicon. No cognitive ‘searching’ is required to construct a meaningful interpretation: the context immediately selects the appropriate sense/frame. Cruse explains it thus:

If, however, a metaphor is used sufficiently frequently with a particular meaning, it loses its characteristic flavour, or piquancy, its capacity to surprise, and hearers encode the metaphorical meaning as one of the standard senses of the expression. Interpreting it then no longer requires the activation of the metaphorical strategy, working through the literal meaning, but merely requires the looking up, as it were, of a dictionary entry, in much the same way, presumably, that idioms are interpreted. (Cruse 1986, 42)⁷⁸

This distinction between novel and conventionalised metaphors is not always clear-cut, since conventionality is a graded property, as is the salience of a (source) frame, and the semantic shift from a creative to an entrenched sense occurs gradually.⁷⁹

able “to **calculate** (or **compute**) the intended meaning of the utterance as a function of its literal meaning and of the context in which it is uttered” (Lyons 1995, 283, emphasis original).

⁷⁵ These are traditionally called ‘dead metaphors,’ or sometimes ‘frozen metaphors’ (Cruse 1986, 41). See the critique of the term ‘dead metaphor’ in Kövecses 2002, ix.

⁷⁶ In most cases, this conceptual mapping will be alive and well in the language users’ cognitive system. That is, there are typically both novel and conventionalised metaphors connected (more or less) to the one mapping.

⁷⁷ Cf. Cruse 1986, 41; Croft and Cruse 2004, 204–6.

⁷⁸ Cf. also Danesi 1997, 34.

⁷⁹ Indeed, once the process is complete the newly conventionalised sense may itself become the basis for further metaphoric extensions. Patrick Hanks illustrates this process with the expression *take by storm* (Hanks 2004, 264–65). The military idiom *take (a place) by storm* apparently arose in the 17th century, as a metaphoric extension of the atmospheric-disturbance sense of *storm*. Over time, this “exploitation [i.e., novel extension] of a prototype” itself became “established as a prototype”; and in

Having identified three metaphorical phenomena, we need to ask which are relevant to lexicographical description. To begin with, more complex metaphors depend on a combination of words and ideas from different domains, rather than on any individual figurative LU. A lexicon is not the place to analyse such metaphors. In an 'ordinary' lexicon for a living language, the heart of the endeavour is synchronic identification and analysis of conventional word senses, so that novel metaphors are not particularly relevant.

More conventionalised metaphoric senses of words obviously warrant entries; but should their metaphoric character be represented? And what of schematic conceptual mappings—should these figure in a lexicon? I suggest that in a lexicon which is interested in cognitive semantics, describing such mappings, and linking entrenched metaphoric LUs to their bases via these mappings, would be both relevant and helpful. This would be rather awkward in a paper lexicon; but electronic lexica make such a task much more feasible.

Lexica of BH are not entirely 'ordinary,' for two reasons: they operate with an ancient form of the language (and in that sense, a non-living dialect), and in many cases they try to account for *every* usage of a word in the HB, whether entrenched or creative. Indeed, it is sometimes impossible to decide between conventionalised and novel senses. For all these reasons, a cognitively-oriented BH lexicon might attempt to elucidate some of the metaphoric mappings which underlie novel as well as conventionalised uses of Hebrew words. This is by no means an easy task; but its long-term fruit would be a better understanding and description of the thought structures that undergird the language of the Bible.⁸⁰

7. Concluding remarks

This chapter has laid out the theoretical starting-point for my own approach to lexical semantics, namely, the observation that meaning is a matter of dynamic construal, operating on the basis of a number of constraints, as a result of which one or more conceptual frames are evoked—rich, structured cognitive categories, areas of (community-

current usage, it is in turn "regularly exploited in several domains": for instance, *She took the fashion world by storm*.

⁸⁰ We will return to this, and start to explore *how* this might be done, in ch. 6 §5.

specific) shared mental organisation.⁸¹ In this dynamic-construal frame-based model, sense relations are reinterpreted as relations between concepts; words are related only via the conceptual structures they evoke, so that relations between expressions are also capable of dynamic construal in context. Furthermore, these frames are related to one another in complex networks, with relationships of various kinds, including both entrenched and novel metaphoric mappings.

⁸¹ Cf. Clausner and Croft 1999, 3: "These four constructs—concepts, domains, construals, and categories—appear to us to represent the most widely accepted fundamentals of cognitive semantics."

CHAPTER FOUR

FROM TYPOLOGY TO RADICAL CONSTRUCTION GRAMMAR

The relationship between grammar and meaning is probably the most crucial issue in current linguistic theory.

—Langacker, *Grammar and Conceptualization*

Since the focus of this book is lexical semantics, a chapter on grammar may seem like a digression. However, we will see in chapter 5 that Fillmore's Frame Semantics, and the FrameNet project which has grown out of it, approaches lexical semantics from the perspective of the relationship between syntax and semantics. Indeed, linguists are increasingly subscribing to the view that 'grammar' and 'lexicon' are the ends of a continuum, rather than entirely separate categories. A robust grammatical theory will therefore be crucial. In this chapter, I will introduce the key grammatical concepts underlying my approach as a whole; they will be particularly relevant from chapter 7 onwards.

My approach to grammar has its genesis in two current fields of linguistic research, namely, linguistic **typology** and **construction grammar**; and above all, it follows William Croft's synthesis of these fields in his theory of **Radical Construction Grammar** (RCG).¹

As an aside, my exploration of typology and RCG grew out of my attempts to convert the grammatical categories used in FrameNet into categories applicable to BH grammar. Given that Frame Semantics uses a very simple form of grammar, this seemed a relatively small hurdle. Instead, it raised many questions: What types of categories are there, in BH and in languages generally? How should we go about identifying and defining categories in a given language? Are such categories really discrete and self-contained? In fact, such questions have long perplexed linguists, particularly typologists.

¹ Although to this point I have focused on Croft's theories regarding cognitive semantics, he is better known for his work in linguistic typology and grammar (Croft 1991, 2001, 2003, 2005). Matthew Anstey (2006a, 2006b) has recently called for linguistic research into BH which is more in line with the conventions of general linguistic typology, and has modelled such an approach. I will not deal at length with questions of method in linguistic typology—though Croft's work is at heart about valid methods, particularly in distributional analysis.

Linguistic typology has to do with cross-linguistic comparison through empirical study, utilising a broad sample of languages.² Typology began in the classification of languages according to various types, and linguistic typology is sometimes still described as language classification. However, largely through the work of Joseph Greenberg, typology developed into the study of systematic patterns that occur through languages, and the articulation of language **universals**, many of which are ‘implicational’ universals (Greenberg 1963, 58).³

Croft’s work in typology gave birth to Radical Construction Grammar (Croft 1991, 2001, 2005; Croft and Cruse 2004, 283–89).⁴ Although RCG is a monumental theory, for our purposes it has three fundamental tenets:⁵

1. The basic, primitive units of syntactic representation in any language are language-specific **grammatical constructions**.
2. **Grammatical categories**—whether lexical categories like Noun and Verb, phrasal categories like NP and VP, or syntactic roles like Subject and Object—are entirely defined by or derived from the particular constructions in which they occur.
3. **Syntactic relations**—that is, horizontal relations which are said to exist between elements in a construction, and which are defined independently of any semantic content—are illusory. Instead, each element in a construction fills a **syntactic role** in the construction; that is, syntactic relations are **meronymic** (part-whole) relations. The only relations *between* elements in a construction are **semantic relations**.

² For an introduction to the topic, particularly to the differences between the (functional-)typological approach to cross-linguistic comparison and Chomskyan structuralist-generative approaches, see Croft 2003, 1–30, 280–90.

³ Implicational universals are of the form “If *x* holds for a given language, then we find that *y* also holds.”

⁴ Although Croft calls his theory “radical,” John Taylor (2004), in his favourable review, finds himself, “in a strange sort of way,” at odds with the label; and he concludes, “In discussing the ‘radical’ nature of RCG I have, in effect, been arguing for the ‘naturalness’ of RCG, the inevitability, almost, of the RCG position, given the evidence of idioms (including constructional idioms), and the language-specific nature even of the ‘core’ constructions of a language” (Taylor 2004, 345). Note, however, that Croft intends the label to indicate not the inherent ‘unnaturalness’ of RCG, but the fact that it “represents a dramatic break from prior syntactic theories” (Croft 2001, 4).

⁵ Croft himself summarises RCG in five points (Croft 2001, 363–64). My three points are compatible with, but less comprehensive than, his five.

In §1 of this chapter I will give an overview of constructions (tenet 1) as well as the basic convictions shared by so-called construction grammars (what Croft [2005] dubbed “vanilla construction grammar”).⁶ In §§2–3 we will look at the principles which distinguish RCG from other theories (tenets 2 and 3), before exploring how RCG applies these principles to various linguistic questions.

1. *Construction grammar(s)*

RCG is but one of a number of grammatical theories which can be described as construction (or *constructionist*) grammars. The oldest and most influential are Ronald Langacker’s **Cognitive Grammar** (Langacker 1982, 1987a, 1991, 2000b, 2003, 2005; Taylor 2002; Evans and Green 2006) and Charles Fillmore and Paul Kay’s **Construction Grammar** (Fillmore, Kay, and O’Connor 1988; Kay 1997; Kay and Fillmore 1999; Kay 2002).⁷ The constructional approach of George Lakoff and his student Adele Goldberg (Lakoff 1987; Goldberg 1995) is a significant variation on Construction Grammar. Other recent offshoots are Fluid Construction Grammar (De Beule and Steels 2005) and Embodied Construction Grammar (Chang et al. 2002; Bergen, Chang, and Narayan 2004; Bergen and Chang 2005). Except where it is important for my purposes, I will not dwell on the differences between the various theories.⁸

⁶ For overviews of construction grammars in general, see Croft 2001, 14–29; Goldberg 2003a; Croft and Cruse 2004, chap. 10; Langacker 2005, 101–4; Croft 2005; Schönefeld 2006.

⁷ Note that I use (capitalised) ‘Construction Grammar’ to denote Fillmore and Kay’s theory specifically, and ‘construction grammar(s)’ to denote constructionist approaches in general. Apart from ‘RCG,’ I have avoided using acronyms for the various theories—mainly because they are used inconsistently, and are prone to ambiguity. For example, ‘CG’ is used sometimes for Construction Grammar and elsewhere for Cognitive Grammar; and ‘CxG’ is used sometimes for Construction Grammar and elsewhere for (vanilla) construction grammar.

⁸ The four approaches discussed by both Croft (2001; Croft and Cruse 2004, chap. 10) and Doris Schönefeld (2006) are Construction Grammar, Cognitive Grammar, Lakoff and Goldberg’s model, and RCG. In terms of their similarity to one another, Construction Grammar and Lakoff/Goldberg have significant commonalities, though there are differences in the way they handle relations between constructions (Croft and Cruse 2004, 272–78). Construction Grammar also has similarities with Head-Driven Phrase Structure Grammar (Pollard and Sag 1994) and Lexical Functional Grammar (Bresnan 1982; cf. Kay and Fillmore 1999, 3). Cognitive Grammar and

1.1. *Background*

Construction Grammar developed from within generative grammar, as a reaction against some of its perceived flaws—though of all the constructionist approaches, Construction Grammar has retained the strongest links with formalist theories (cf. Croft and Cruse 2004, 266). Nevertheless, all construction grammars contrast in significant ways with the various versions of generative grammar, even though they share some very basic assumptions (Goldberg 2003a, 219; Langacker 1987a, 4–5).⁹ Broadly speaking, constructional approaches have more in common with functional grammars.¹⁰

In most generative theories, it is held that language is best analysed if the different aspects, or *components*, of linguistic knowledge are kept separate from one another.¹¹ A typical generative model might posit three independent components of linguistic knowledge: phonological, syntactic, and semantic (though the precise components vary between theories). The only component which combines information from all these levels is the lexicon, which is thus seen as straddling the

RCG, in turn, have much in common—though Langacker (2005) fails to appreciate this, possibly because he misunderstands Croft's use of the term 'syntactic' (e.g., tenet 3 above). Note in particular Croft's claim that RCG conforms to the 'content requirement' of Cognitive Grammar (Croft 2001, 6). Taylor (2004), also a Cognitive Grammarian, has a more positive opinion of RCG.

⁹ Different construction grammarians have varying perspectives on the degree of contrast between Construction Grammar and generative grammar; compare, for example, Goldberg 2003a, 219 with Östman and Fried 2005b, 1. Nevertheless, the contrast itself was clear from the very beginning of Construction Grammar (e.g., Fillmore, Kay, and O'Connor 1988, 501).

¹⁰ I will not here assess the relative merits of construction grammars and the various functional grammars. Note, however, that Anstey has recently proposed a modified form of Functional Discourse Grammar (FDG) called Constructional FDG (Anstey 2006b, 87–93; 2008; 2009). His attempt to integrate Construction Grammar and FDG, while beyond the scope of the present work, is very significant—not only because it proposes a fundamental restructuring of FDG (though see Anstey 2006b, 94), but because this has been developed in the context of BH research. It remains to be seen how this union will develop. His grammar inherits much of the notational complexity and (to the newcomer) opaqueness of Functional Grammar and FDG, though he proposes a number of simplifications; and it may prove to be a powerful mechanism for describing the inner structure of a construction. In that regard, Constructional FDG seems quite compatible with construction grammars in general, but presents an alternative to the descriptive system of Construction Grammar.

¹¹ For this reason, most generative grammars hold to a *componential* approach to grammar (cf. Croft and Cruse 2004, 225). This should be distinguished from componential semantics (e.g., Nida 1975; van Steenberg 2002a; 2002b).

other components. However, more recent versions of generative grammar have posited general *linking rules*, which relate the various components to one another. Importantly, irregularities in the system are restricted to the lexicon; the other components consist of general and consistently-applied rules. Figure 4.1 depicts this structure.

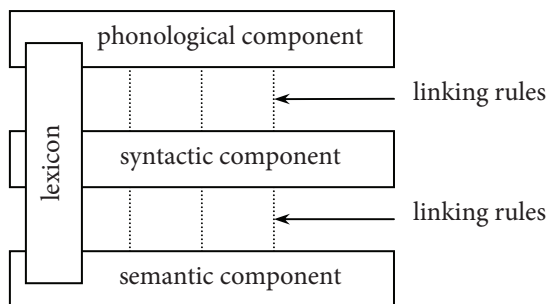


Figure 4.1 A componential model of grammar. Reproduced by permission of Oxford University Press from Croft 2001, 15, fig. 1.1.

A decisive and landmark break from generative grammar came with Langacker's major essay on "Space Grammar" (Langacker 1982), which later became *Cognitive Grammar*.¹² He proposed a series of "contrasting theses," which had emerged from his deep dissatisfaction with the foundational principles of grammatical theory at the time. The theses he articulated included the importance of conventional linguistic 'units,' the symbolic nature of grammar (and thus the non-autonomy of syntax), a non-derivational view of grammar (i.e., rejecting 'deep' syntactic structures), and the lexicon-grammar continuum. These, as we will see, are fundamental to what is now known as construction grammar—though Construction Grammar itself was developed somewhat later, and by a rather different route.

The catalyst for Construction Grammar was the study of idioms (Fillmore, Kay, and O'Connor 1988; Nunberg, Wasow, and Sag 1994).¹³ According to the generative model, both the syntactic well-

¹² Langacker avoids giving an 'official' reason for the name change, but he does offer this tongue-in-cheek remark: "A theory called space grammar can obviously not be taken seriously, but one called **cognitive grammar** is potentially of great intellectual significance" (Langacker 1987a, vi).

¹³ Cf. ch. 2 §3.

formedness and the semantic normality of complex expressions should rely *only* on the properties of the constituent lexemes and the general syntactic/semantic rules governing their proper combination.¹⁴ Some idioms—namely, those which have a fixed form, known as lexically filled or **substantive**—pose few problems for such a model: they are listed in the lexicon, along with all other arbitrary form-meaning combinations. Included here are expressions such as *kick the bucket*, *it takes one to know one* (Croft and Cruse 2004, 233), and *going great guns* (Goldberg 2003a, 220).

Idioms which are, to some extent, lexically open or **schematic** (“formal” in Fillmore, Kay, and O’Connor 1988) pose far greater problems. These include:

- (1) a. The X-er, the Y-er; e.g., The more, the merrier; The harder you work, the better you’ll become.
- b. What’s X doing Y? e.g., What’s this doing here? What are they doing giving those to children?
- c. No X-ing! e.g., No running! No writing on the walls!
- d. Not half the X; e.g., He’s not half the doctor you are.¹⁵

These clearly cannot be listed in the lexicon, since they are grammatical combinations of constituent lexemes, and are highly productive. However, each also has idiosyncratic syntactic and/or semantic properties, which cannot be predicted by a general set of rules.

Even substantive idioms are often problematic. Fixed expressions like *Believe you me*, *Be that as it may*, *kick the habit*, and *spill the beans* are at least to some degree *compositional*, in that “the phrasal meaning, once known, can be analyzed in terms of the contributions of the idiom parts” (Nunberg, Wasow, and Sag 1994, 498). Nunberg et al. call such expressions *idiomatically combining expressions*.¹⁶

Thus, Nunberg et al. demonstrated that, contrary to widespread assumption, conventionality does *not* entail noncompositionality; that is, a great many lexically complex and compositional expressions have idiosyncratic properties in their form and/or meaning, which do not correspond with any regular rules of syntax or semantics. They

¹⁴ In terms of sentence semantics, this framework is clear in Katz and Fodor 1963.

¹⁵ For similar examples, and many more, see Fillmore, Kay, and O’Connor 1988; Nunberg, Wasow, and Sag 1994; Kay and Fillmore 1999.

¹⁶ This is a very short and simplified account of idioms, which can be categorised in a number of different ways; cf. Fillmore, Kay, and O’Connor 1988; Nunberg, Wasow, and Sag 1994; Croft and Cruse 2004, 229–36.

cannot be listed in the lexicon; and yet they are conventional form-function combinations. This suggests, as Langacker had earlier claimed, that 'lexicon' and 'grammar' lie on a continuum, rather than being entirely distinct components.

Fillmore, Kay, and O'Connor, in their original essay, concluded that linguistic irregularities "cannot be accounted for by constructing lists of exceptions: the realm of idiomaticity in a language includes a great deal that is productive, highly structured, and worthy of serious grammatical investigation" (Fillmore, Kay, and O'Connor 1988, 534). Moreover, languages contain structures larger than lexical items that have particular, associated semantic and syntactic properties. They also suggested the possibility that the means of describing such form-meaning combinations might be generalised to represent the more regular aspects of grammar.

This suggestion developed into Construction Grammar.¹⁷ Construction grammarians claim not only that a constructional approach solves minor deficiencies in generative grammar. They claim that it will ultimately provide the most complete account of linguistic knowledge, accounting for all the data in a way which is consistent and cognitively satisfactory. This claim is what differentiates construction grammar from other theories which allow a limited place for constructions (Goldberg 2003a, 223).¹⁸

1.2. *Constructions and the symbolic nature of language*

The main unifying feature of construction grammars, in contrast with the componential formalist model, is that they view all grammatical knowledge as consisting in "pairings of form and meaning that are at least partially arbitrary" (Croft and Cruse 2004, 257). In other words, grammatical knowledge is fundamentally **symbolic**, in the sense used by Langacker (1987a, 56–62); syntax and semantics are not self-

¹⁷ "The hypothesis behind this methodology is that an account of the rich semantic, pragmatic, and complex formal constraints on these patterns readily extends to more general, simple or regular patterns" (Goldberg 2003a, 220).

¹⁸ This is a very brief account of the origins of construction grammars, and I have by no means attempted a full-scale argument for construction grammar over other theories. For these, see the literature already cited. Evidence for a constructional approach to language is also starting to emerge from studies into early language development; see e.g., Tomasello 2000a, 2000b; Diessel and Tomasello 2001; Chang 2004; Chang and Gurevich 2004; Goldberg, Casenhiser, and Sethuraman 2004.

contained modules.¹⁹ The symbolic units (form-meaning pairings) which make up grammatical knowledge are called **constructions**.

All constructions therefore have three aspects: formal properties,²⁰ semantic properties, and symbolic links between the formal and semantic properties.²¹ This is shown in figure 4.2.²²

Formally, a construction consists of one or more **elements**, each of which has a particular **syntactic role** in the construction and (arguably) a **syntactic relation** to other elements. Syntactic roles pertain to the meronymic (part-whole) structure of a construction—what elements a construction has. Syntactic relations pertain to horizontal, non-semantic relations *between* the elements. Assuming for the moment the existence of syntactic relations, this formal structure is depicted in figure 4.3a, and illustrated in figure 4.3b with the English Transitive Active Clause. The sentence *John caught two fish* is called a **construct**, or an **instance** of the English Transitive Active Clause.²³

¹⁹ Along with work on idioms, analyses of the semantics of argument structure constructions have been particularly important in casting doubt on the modular approach; in particular, Sally Rice (1987) on Transitive constructions and Adele Goldberg (1995) on Ditransitives, Resultatives, and so on.

²⁰ The formal pole in construction grammar is variously described as the syntactic pole, the morphosyntactic pole, or (especially in Cognitive Grammar) the phonological pole. I use ‘formal’ here as a broad descriptor. It should be stressed that the bipartite ‘form-meaning’ characterisation is not necessarily incompatible with tripartite schemes, such as *conceptual*, *syntactic*, and *expression* layers (Anstey 2006b). As will become apparent, the formal pole includes syntactic (in a restricted sense) and morphological/phonological properties.

²¹ The symbolic links between form and meaning in construction grammar have some resemblance to the linking rules of generative theories—though “the symbolic link between form and conventional meaning is internal to a construction in [construction grammars], but is external to the syntactic and semantic components in [componential theories] (as linking rules)” (Croft 2001, 19). Actually, the very fact that generative grammarians have had to posit linking rules is suggestive of the weaknesses which gave rise to construction grammars, and the greater the number and specificity of the linking rules posited, the closer generative grammar comes to resemble constructional approaches. Fundamental differences between them remain, however—such as generative grammar’s claim that syntax is basically regular, and that it can be studied and described in isolation from semantics.

²² There are many possible ways of depicting both constructions and the relationships between them. Some construction grammarians use a notation with boxes (or similar), though various simplified notions are also used. Langacker often uses a pictorial system in his Cognitive Grammar. For our purposes, these are of secondary importance.

²³ For reasons which will become apparent, the precise labels used in this diagram are not especially important; they are mainly mnemonic devices.

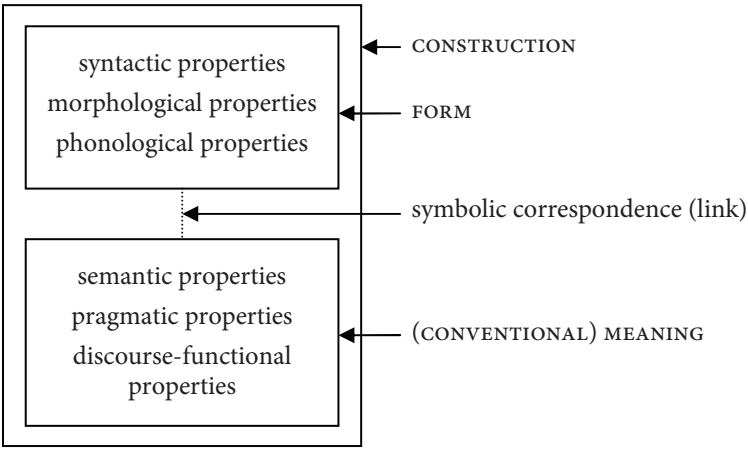


Figure 4.2 The structure of a construction. Reproduced by permission of Oxford University Press from Croft 2001, 18, fig. 1.2.

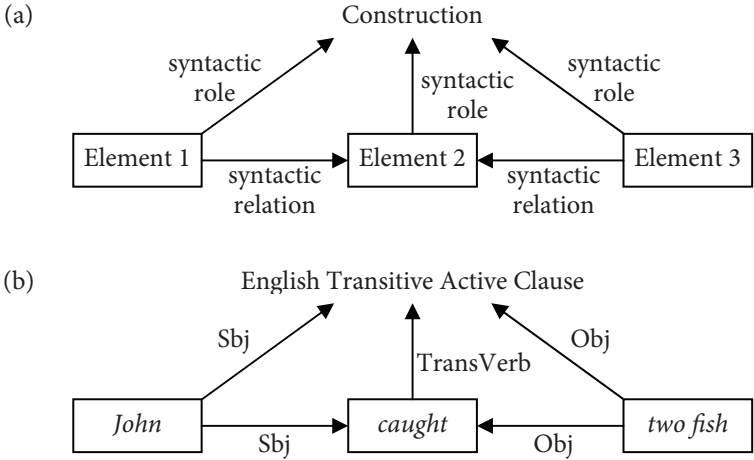


Figure 4.3 The formal structure of a construction

Some elements may be fully substantive (lexically specified), and others schematic to varying degrees. For example, the English Predicate Adjective construction, of the form [Sbj *be* Adj], has two schematic elements and one substantive (a form of the Copula *be*). Constructions may have a variety of other formal properties, including formal

grouping (or contiguity) and linear order of elements, prosodic structure, case marking, and agreement.²⁴

Figure 4.3 also illustrates the role/relation ambiguity of terms like *subject* and *object*. They can either be used to indicate that a constituent fills a particular role within a containing construction, as in “*John*” fills the *Subject* role in the *Transitive Active Clause*; or they can denote a syntactic relation between two elements, as in “*John*” is the *Subject* of the *Verb* “*caught*.” In line with RCG, I will usually use such terms in the former sense.

A construction also has a semantic structure, which represents all the conventional aspects of a construction’s meaning, including pragmatic and/or discourse function, register, and so on. The semantic structure consists of one or more parts, or **components**, along with various **semantic relations** between the components. This is represented in figure 4.4a. The semantic structure of figure 4.3b is also illustrated, first for the schematic Transitive Active Clause (fig. 4.4b) and then for the instance *John caught two fish* (fig. 4.4c). The example has three components: a two-place event predicate and its two arguments (or event participants), both of which are referring expressions.

Finally, and most importantly, a construction specifies **symbolic relations** which link the syntactic and semantic structures. Thus, a symbolic relation will link a (syntactic) element of a construction to the (semantic) component that it symbolises. Together, an element and its corresponding component are called a **unit** of the construction. In addition, there is a symbolic relation between the syntactic and semantic structures in their entirety—which, in the previous example, associates the Transitive Active Clause syntactic structure with a particular two-place predicate-argument semantic structure. This is shown in figure 4.5.

²⁴ Case marking and agreement are examples of *overtly coded dependencies*. Croft divides these into two types: relational coded dependencies, which “encode the semantic relation between the denotations of the elements that they relate,” and indexical (or deictic) coded dependencies, which “index the referent of one of the members of a dependency” (Croft 2001, 199). Relational morphemes include case markers and adpositions. Indexical morphemes include agreement markers on various types of words, and numeral classifiers and possessive classifiers. For Croft’s argument that these all encode semantic relations rather than syntactic ones, see Croft 2001, chap. 5 (and also below).

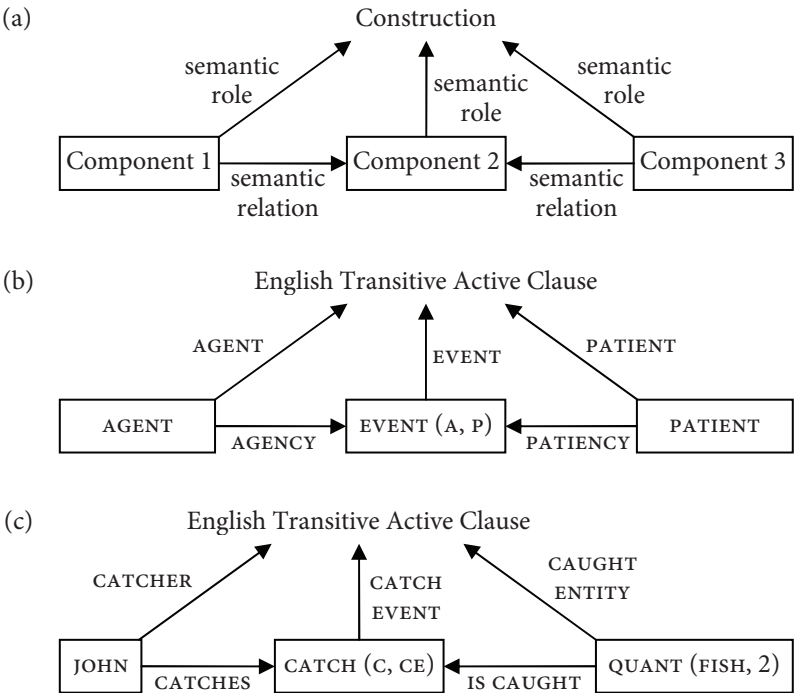


Figure 4.4 The semantic structure of a construction

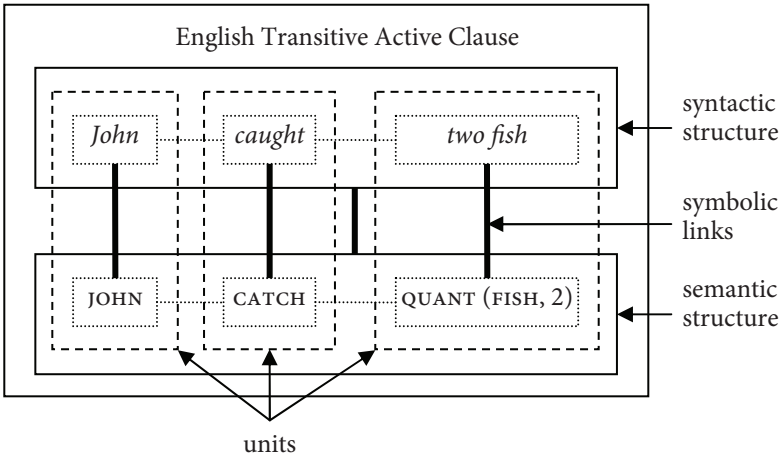


Figure 4.5 The symbolic structure of a construction. Adapted by permission of Oxford University Press from Croft 2001, 20–21, figs. 1.5 and 1.6.

For a BH example, consider the following instance of the BH Nominal Classifying Predication construction:²⁵

- (2) מֶקוֹר חַיִּים פִּי צַדִּיק
měqôr hayy-îm pî şaddîq
 fountain|CNST life-MPL mouth|CNST righteous
 “The mouth of a righteous person is a fountain of life” (Prov 10:11)

The symbolic structure is shown in figure 4.6. The boxes in the syntactic structure show the element’s syntactic role label and its form, and in the semantic structure show the component’s semantic role label and its meaning. The syntactic relation arrow is dashed, in anticipation of the RCG deconstruction of syntactic relations. The instance follows the typical element order of a Nominal Classifying Predication, which is Predicate-Subject—however, the diagram does not show the symbolic function of this element order.

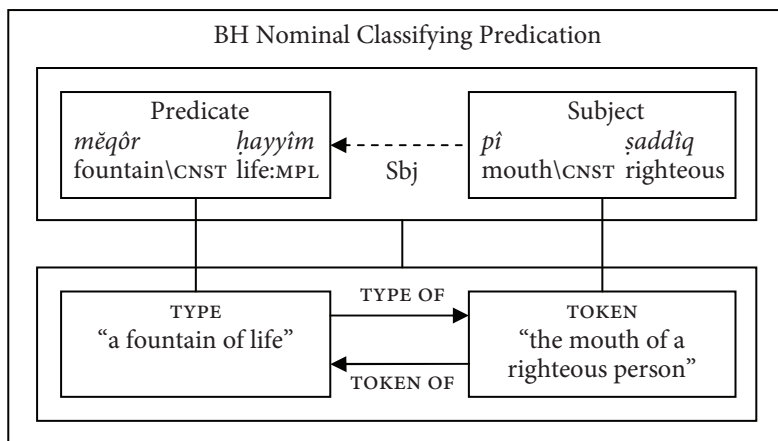


Figure 4.6 The symbolic structure of a BH Nominal Classifying Predication

One controversial aspect of such a model, from a componential grammatical perspective, is the idea that a schematic structure like a Transitive Active Clause or a Nominal Classifying Predication might have a meaning associated with it. However, several scholars have

²⁵ This differs from the BH Nominal Identity Predication; cf. Andersen 1970, *IBHS* §8.4, and Croft 1991, 69–70 on ‘classifying’ vs. ‘identity’ subject-predicate noun relations.

provided compelling evidence that in many instances schematic syntactic structures must contribute to the meaning of a whole expression, and will even override the conventional meanings of constituent LUs (Goldberg 1995; Boas 2003; Michaelis 2003, 2004; Michaelis and Ruppenhofer 2004). Indeed, examples of conflict or ‘coercion’ simply illustrate the more general process of interpretation, in which “the interpreter must reconcile the meaning of a morphosyntactic construction with the meaning of a lexical filler” (Michaelis 2004, 7).²⁶

Everything which applies to complex constructions (phrases and clauses) equally applies, in the limiting case, to atomic, non-compositional units—that is, lexemes and (assuming, for now, their validity) primitive grammatical categories like Subject and Noun. Similarly, both schematic constructions, like the Transitive Active Clause, and substantive constructions, like *pull strings*, can in theory be represented the same way, as entrenched form-meaning associations. Thus, constructions vary along two axes: the atomic-complex axis, and the substantive-schematic axis (fig. 4.7).

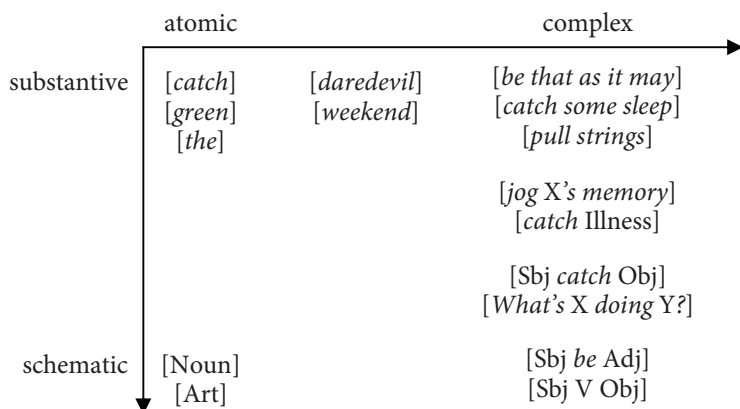


Figure 4.7 Constructions as atomic or complex, substantive or schematic

²⁶ The constructions they have studied include Ditransitives, Caused Motion constructions, Resultatives, the German Applicative *be-*, aspectual constructions, and discourse-function constructions. The first four of these are examples of ‘argument-structure constructions’ (Goldberg 1995), each of which specifies an archetypal event type along with a configuration of arguments expressing general thematic roles. Sally Rice’s Cognitive Grammar study of Transitive Clauses (Rice 1987) is an important precursor. For further constructions, see Kolehmainen and Larjavaara 2004.

I have so far left aside the question of whether the sentence *John caught two fish* should be categorised as a Transitive Active Clause or a more specific [Sbj *catch* Obj] construction. In fact, both categorisations are correct, which leads us to the complex issue of relations between constructions.

1.3. *Construction inheritance relations and the ‘constructionicon’*

Construction grammar is a non-derivational theory. That is, surface syntax is not treated as derived from the real, ‘deep’ form; rather, form is treated at face value. Thus, sentence (3a) is an instance of the English Transitive Active Clause construction, while (3b) is an instance of the English Passive construction.

- (3) a. A shark took the bait.
b. The bait was taken by a shark.

The semantic difference between these is significant, in terms of topic and focus; (3b) is not merely a surface-form variation on (3a).

Constructions can be related to one another, however. In construction grammar, the constructions of a given language are organised in *inheritance* hierarchies, or taxonomic networks. Constructions further up the network are more general and schematic. Those further down, which ‘inherit’ from them, are taken to be more specific and limited form-meaning units, which share the characteristics of the schematic construction, but are independent ‘nodes.’²⁷ Inherited constructions are posited if they have any formal and/or functional characteristics that are not predictable from the more schematic parent constructions (Croft and Cruse 2004, 263).

Moreover, most versions of construction grammar (all except Construction Grammar) also include as independent, inherited constructions those which are predictable, but are cognitively entrenched through frequent usage.²⁸ This is a feature of a **usage-based** model of linguistic analysis (Langacker 1987a, 1988; Barlow and Kemmer 2000; Tomasello 2000a, 2003; Thompson and Hopper 2001; Croft and

²⁷ There are variations in the kinds of relations proposed. Some construction grammarians distinguish between ‘instantiation links’ and ‘extension links’; in the latter case (but not the former), there is some conflict between the inherited construction and its more schematic parent (Diessel and Tomasello 2001, 133–34).

²⁸ Cf. Langacker 1987a, 46, 370; Goldberg 2003a, 219–20; Croft and Cruse 2004, 283.

Cruse 2004, 291–327). In a usage-based model, linguistic knowledge is analysed as a slowly-evolving cognitive system, where the changes come from ‘usage events’—that is, utterances, instances of constructions. Thus, while all cognitive grammars maintain that many multi-word structures and patterns must be learned (stored and retrieved) as idiosyncratic form-meaning pairings, usage-based versions maintain that many more *are* learned—not out of necessity, but from frequency of use.²⁹

A language-user’s complete mental catalogue of constructions, ranging from atomic to complex and from substantive to schematic, and arranged in a complex taxonomic network, is sometimes called the **constructicon** of a language (Goldberg 2003b).

To illustrate construction inheritance, we will consider again the following sentence:

- (4) John caught two fish.

This fits the predicate-argument structure of the schematic Transitive Active Clause [Sbj V Obj], whose highly abstract and prototypical semantic structure could be described in terms of force-dynamic interaction, or transmission of energy along an action chain.³⁰ However, this characteristic use of the Verb *catch* with this argument structure justifies an inherited node, which I will call the Transitive *catch* Clause [Sbj *catch* Obj].³¹

²⁹ Of course, degree of entrenchment is difficult to estimate with an ancient language; nevertheless, the notion of ‘token frequency’ (Croft and Cruse 2004, 292) gives a basis for investigating such a question. I suggest that there is enough data in the HB to identify at least the major, schematic constructions which are entrenched.

³⁰ Cf. Rice 1987; Talmy 1988; 2000, chap. 7; Langacker 1991, 309–11; 2003, 193. Rice’s study of English Transitive constructions is particularly influential. She describes transitivity, like other linguistic phenomena, as a construed category with prototype effects. “At heart, transitivity is a linguistic device optionally employed by a speaker to conceptualize and organize the actions of entities in the world in order to convey a certain attitude about an overall event to someone else” (Rice 1987, 5). The prototype is characterised by asymmetry, contact, directedness, effect, and distinctiveness; and overall, the prototype can be described in force-dynamic terms in a spatiotemporal setting (i.e., as an action chain: Rice 1987, 71). Variations on the prototype exist for three major domains: physical, mental, and social. Note that abstract, schematic constructions emerge at a later stage of childhood language acquisition, and represent an advanced form of categorisation (Tomasello 2000b).

³¹ Generative grammars would place these two constructions in separate modules. The Transitive Active Clause corresponds to two phrase structure rules in the syntactic component: $S \rightarrow NP VP$, and $VP \rightarrow V NP$. The Transitive Active *catch*

What is specified in the semantic pole of the Transitive *catch* Clause? This question is difficult, since *catch* is a highly polysemic lexeme.³² When used with this argument structure (i.e., in a Transitive *catch* Clause), the prototypical meaning is “intercept and hold on to (something moving through the air)”; but there is a wide range of conventionalised senses, whose arguments range from lexically open to filled. Beginning with the prototypical sense, and listing the more productive and common (less idiomatic) uses first, they include:

- (5) a. Sbj catch Projectile: catch the ball, etc.
- b. Sbj catch Animal: catch a fish/lion/mouse
- c. Sbj catch Offender: catch a thief/an intruder/the person who’s been stealing biscuits³³
- d. Sbj catch Illness: catch a cold/the flu³⁴
- e. Sbj catch Transport: catch a bus/train/cable car/plane/flight/ride
- f. Sbj catch Entity-Moving-Away: catch the guy in front/the run-away trolley
- g. Sbj catch Speech: catch that/your name/what she said³⁵
- h. Sbj catch Visual-Event: catch a movie/a game on TV
- i. Sbj catch your meaning/drift
- j. Sbj catch her attention/eye
- k. Sbj catch some sleep/z’s
- l. Sbj catch a wave
- m. Sbj catch some sun/rays
- n. Sbj catch one’s breath³⁶

In light of this variety, what can we make of the semantic content of the Transitive *catch* Clause? It would either contain the prototypical

Clause corresponds to the ‘subcategorisation frame’ for the verb *catch*, which is listed in the lexicon, and merely specifies the type of the Verb’s Object: thus, *catch*: [_ NP].

³² I will only consider the verbal (predicating) uses of *catch*. Nominal uses include, for example, *a great catch*.

³³ The differences between senses a, b, and c may not be immediately apparent. All share the general notion of capturing a moving entity; however, in sense a (but neither b nor c) the entity is presumed to be moving through the air. While sense c differs from b in attributing guilt to the captured entity, the distinction is not always obvious: *the hunter caught a lion* evokes sense b, while *they finally caught the rogue lion* primarily evokes sense c (compare *we caught the offending animal*).

³⁴ A metaphorical extension is [*catch* Pastime bug], as in *catch the travel bug*.

³⁵ This may come under a more general sense for auditory (or any sensory) input.

³⁶ These are only some of the more entrenched examples that I found. Less entrenched expressions include *catch the dream*, *catch the wind*, and *catch the fire*; and a specialised sense, in rowing parlance, is found in *catch a crab* (meaning “fail to lift an oar sufficiently out of the water”). Finally, the proverb *The early bird catches the worm* also fits the Transitive *catch* Clause pattern.

sense or (as a polysemous construction) the prototypical senses of *catch* in this construction, or else we might associate it with the vague ‘purport’ underlying all the conventionalised uses. Whatever the case, each of the sentences above would require a separate node in the construction; and all are sub-types of the Transitive *catch* Clause.

Semantically, this is supported by the fact that all the senses represented in (5a–n) are related, via metaphoric and image-schematic processes, to the prototypical meaning “intercept and hold on to (something moving through the air).”³⁷ The basic metaphorical extension applies to anything which can be construed as something the Agent wants to possess or gain control over, and which is moving or elusive in some way. Thus, to *catch an offender* construes the caught person (or animal) as moving in such a way as to avoid being intercepted; *I didn’t catch your name* construes the name (or utterance of the name) as a fleeting ‘thing’ which passed by before the subject could (aurally) intercept it; and to *catch her attention* construes the patient’s field of awareness as a shifting and elusive object, which the agent manages to intercept and coerce in their direction.

To take a few of these senses, then, the Transitive uses of *catch* are arranged in the construction as in figure 4.8.

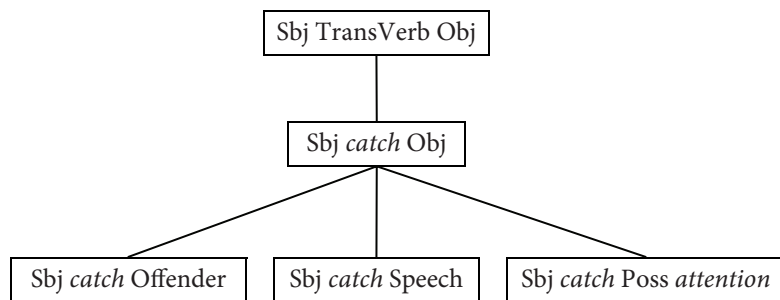


Figure 4.8 Some uses of *catch* in the construction taxonomy

I have not yet considered *catch* constructions which do not fit the Transitive *catch* Clause pattern, but which are (more or less) semantically related to one of the senses above; for example:

³⁷ Of course, in most of them the ‘caught’ entity is construed as moving through a SPACE of some abstract sort, but not ‘the air’ in a physical sense.

- (6) a. Sbj catch X Ying: catch her partner cheating, catch him stealing
 b. Sbj catch Offender State: catch the thief red-handed/in the act
 c. Sbj catch X out/cold/off-guard/napping
 d. Sbj catch sight of/a glimpse of X
 e. Sbj catch you Time: catch you later/tomorrow
 f. Sbj catch: the bolt does not catch
 g. Sbj catch on/in Object: the kite caught on a branch
 h. Sbj be caught in a storm (etc.)
 i. Sbj be caught dead
 j. Sbj catch your death of cold
 k. Sbj catch (on) fire/alight

Most of those listed are augmented argument structure patterns (6a–e). Others are Intransitive (6f) or Oblique (6g) constructions, and some are almost entirely limited to Passive constructions (6h–i). Fixed expressions can be difficult to categorise (6j–k).

This brief characterisation of *catch* demonstrates that even a small section of the construction can be very complex; and this complexity is due not only to variations in argument structure (as well as voice, etc.), but also to a multiplicity of entrenched senses.³⁸ In fact, this follows from the definition of a construction as a conventionalised form-meaning pairing: any significant distinction in either form or meaning warrants a separate (though possibly related) construction.

Constructions may have more than one parent in the construction inheritance hierarchy.³⁹ For example, consider example (6b): [Sbj catch Offender State], with instances such as *I caught him with his fingers in the till*, *I caught my toddler on the dining table*, and *They caught her red-handed*. This inherits characteristics from two constructions: (1) [Sbj catch Offender], listed in (5c) above, and (2) the Depictive Clause construction [Sbj DepVerb Obj ObjState], in which the ObjState element expresses a property or state of the Object at the time of the main event (Baker 2003, 219–21). Other examples of the Depictive Clause construction include *The barista served the coffee black*, *I ate the meat raw*, and *I left Chris in a state of shock*.⁴⁰

³⁸ For a helpful example of the complexity of construction inheritance, see Taylor's analysis of the [*Bang go* NP_{Sbj}] construction (Taylor 2002, 578–82).

³⁹ Croft's examples of multiple-parent constructions (Croft 2001, 25–27; Croft and Cruse 2004, 264–65) are actually examples of construction *instances* which blend several entrenched (schematic) constructions; see §1.4 below.

⁴⁰ Sentences of this form can be ambiguous, as the last example illustrates: without any idea of the context, it is not clear whether *in a state of shock* is a property of

Thus, we could add two more entries to the construction portion in figure 4.8, as shown in figure 4.9.

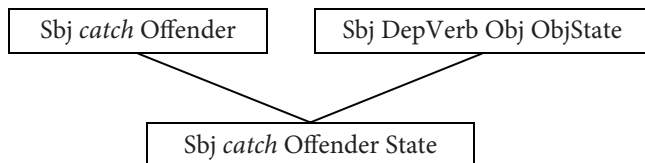


Figure 4.9 A construction with multiple parents

As a final, very Australian example of idioms, idiomatically combining expressions, constructions, and construction inheritance, consider the following paragraph from an Australian newspaper. The story was about the rescue of two miners who had been trapped for fourteen days, and was from the perspective of the rescuer:

- (7) Mr Burns made enough room so that he could put his gnarled hand up, and he shook one offered in reply. “I just said, ‘Owyezgoin’? And they said: ‘Orright’.” (Darby and Tippet 2006)

If a speaker of Australian English were asked to expand the two strange expressions into distinct words, they would probably reply with *how are youse [you:2PL] going?* and *all right*. In both cases, however, the contracted forms are firmly entrenched in some dialects of spoken Australian English, and are stored and retrieved as whole constructions. *Orright* is semantically non-compositional: the term means “quite well,” and any proposed semantic compositional analysis would be contrived.⁴¹ *Ow yez goin?*, in contrast, is an instance of a partially schematic and productive construction, whose pragmatic function is both a greeting and a polite enquiry after one’s wellbeing, and whose register is colloquial and informal. The form of the more schematic construction is [*Ow/Owz Prn goin?*], and its instantiations include the following (in roughly phonetic representation):

Chris or of *I*—that is, whether this is an (Object) Depictive Clause or a Subject Depictive Clause.

⁴¹ An Australian English speaker would break down the form of the expression into two syntactic elements: *all* and *right*. However, these do not symbolise separate semantic components; the symbolic link is from the entire form to the meaning of the whole. That is, *all right* is an idiomatic phrase rather than an idiomatically combining expression (Nunberg, Wasow, and Sag 1994, 497; Croft and Cruse 2004, 232).

- (8) a. /Ow yer goin?/
 b. /Ow yez goin?/
 c. /Owz e goin?/
 d. /Ow they goin?/

Of these, the first two are the most entrenched, and are probably stored in their own right.⁴² Semantically, the construction has internal structure, and is amenable to compositional analysis—hence the response *they're goin pretty well* to (8d). The semantic structure of [Ow/Owz Prn goin?] is also compatible with a more schematic parent: [How be Sbj Xing?], as in *how is the patient recovering?* Nevertheless, the daughter construction is distinctive and entrenched in both form and meaning.

1.4. Construction instances: nesting and blending

The complexity of entrenched constructions and their interrelations is small compared with the complexity of *utterances*, or construction instances. Most expressions are a combination of several entrenched constructions, with smaller constructions nested inside larger ones, and constructions at similar levels blended to form larger, 'normal' expressions.

Nesting relates to the meronymic (part-whole) structure of expressions. The most obvious example of nesting is the fact that complex constructions consist of words, which are themselves constructions. Phrasal constructions fill elements in clausal constructions; for example, in the Depictive Clause *The barista served the coffee black*, *The barista* and *the coffee* are both instances of the Definite NP [Art N] construction.

Nesting is the simplest form of construction combination. Constructions may also be blended together and interwoven. Goldberg gives the following example:

- (9) What did Liza buy the child? (Goldberg 2003a, 221)

She identifies six types of construction involved in this expression: (1) *Liza*, *buy*, *the*, *child*, *what*, and *did* constructions (i.e., words); (2) Ditransitive construction; (3) Question construction; (4) Subject-Auxiliary Inversion construction (*did Liza*); (5) VP construction (*buy*

⁴² There are other closely related constructions, which are also entrenched and similar in meaning to *Ow yer goin?*, such as *Owz it goin?* and *Ow yer doin?*

the child); and (6) NP construction (*What, Liza, the child*). In her discussion, she explains:

The ditransitive construction . . . is characterized in terms of a set of argument types. The overt order of arguments in the ditransitive construction [in (9)] is determined by a combination of a Verb-Phrase (VP) construction with the Question construction, the latter allowing the 'theme' argument (represented by *What*) to appear in the sentence-initial position. (Goldberg 2003a, 221)

There is, then, enormous flexibility and creativity permitted in combining entrenched constructions to form expressions, provided the constructions are compatible with one another. Identifying the requirements for compatibility is an ongoing area of research.⁴³ Most effort is currently being spent on studying the interaction between verbs and complex containing constructions, as illustrated by the *catch* examples above.

2. Deconstructing grammatical categories and syntactic relations

In this section, we will return to the three fundamental tenets of RCG (page 68), particularly the construction-specific nature of the grammatical categories (tenet 2) and the illusion of syntactic relations (tenet 3). These are at the heart of Croft's typological approach.

2.1. Atomic, schematic categories: universal, global, or constructional?

In almost all syntactic theories, including most construction grammars,⁴⁴ constructions are decomposed into atomic primitive elements, such as 'noun,' 'noun phrase,' 'subject,' 'object,' and so on. These atomic, primitive categories are taken to have independent status; constructions are seen as derivative. Croft labels such theories *reductionist*, since they reduce constructions to more basic constituent parts. That is, reductionist theories begin with an inventory of atomic primitives, and define more complex units in terms of combinations of primitives (Croft 2005, 283).

Where atomic, primitive categories are alleged to exist within a given language, Croft calls them *global* categories. However, formalist

⁴³ Cf. Goldberg 1995; 2003b; Michaelis 2003; Boas 2003.

⁴⁴ The exceptions are RCG and Cognitive Grammar (Langacker 1987a, 1991).

theories (e.g., generative grammars), and many functionalist ones, assume the existence of atomic, primitive categories across all languages; Croft calls these *universal* categories (Croft 2001, 32, 45).

RCG denies the existence of such categories not only universally, but even globally. Instead, categories are defined by particular constructions, and constructions themselves are language-specific. RCG is therefore a **nonreductionist** model, because “it takes the whole complex structure as basic and defines the parts in terms of their occurrence in a role in the complex structure” (Croft and Cruse 2004, 285). That is, the primitive units are constructions, not atomic, schematic categories (Croft 2005, 284). The only atomic, primitive units are lexical items, which are themselves constructions.

This does not preclude comparing different construction-specific categories, and attempting to explain the similarities as well as the idiosyncracies, both within and across languages, in terms of human cognition and experience. Indeed, true linguistic universals consist not in atomic, primitive categories, but in the ways in which grammatical *variation* is constrained by “more general cognitive, social-interactive, process, perceptual or other abilities” (Croft 2003, 5). More simply put: “Universals of grammar exist, but only in relation to the concepts encoded by grammar” (Croft 2001, 147). Moreover, the users (and learners) of a language will categorise and abstract away from construction-specific roles, forming derived, more schematic cross-constructional categories (as we will see in §3).

This is important to appreciate. It would be easy to overstate Croft’s position as rejecting atomic schematic categories entirely.⁴⁵ Take, for instance, Jan-Ola Östman and Mirjam Fried’s summary of Croft 2005, in which they claim that, in RCG, “all formal grammatical structures are seen as language-specific and construction-specific and there is no need for lexical categories such as Noun or Verb and relational categories such as Subject and Object” (Östman and Fried 2005b, 7). The first part of this is correct, but the second conflicts with Croft’s stated position: “Radical Construction Grammar does not deny the existence of syntactic categories. It only argues that syntactic categories are derivable from constructions and hence are not the basic building blocks of syntactic representation” (Croft 2005,

⁴⁵ In fact, as Croft acknowledges (2005, 287), he sometimes overstates his own case as rejecting atomic schematic units.

287). That is, RCG denies the *primitive status* of atomic schematic units: they exist “only derivatively” (Croft 2005, 283).⁴⁶

2.2. *Distributional analysis*

Croft mounts an extended typological and logical argument against both universal and global categories (Croft 1999a, 2001, 2003, 2005); space allows only the briefest of summaries here. His critique centres on *distributional analysis*, which is the main method of syntactic analysis used in typology—and implicitly in much syntactic research in other fields, including cognitive linguistics (Croft 2005, 277).⁴⁷ In distributional analysis, “syntactic categories are defined by the occurrence or nonoccurrence of their members in different types of utterances,” that is, in different constructions (Croft 2001, 11). Thus, if two expressions can occupy the same set of roles across a range of constructions, this is evidence that they are members of the same category. Moreover, a particular construction or group of constructions is usually presented as an adequate diagnostic test for a given category. If a word can fill the relevant roles in each test construction, it is accepted as a category member.

A typical example, which is relevant for the grammatical analysis used in FrameNet, is the definition of the English Direct Object syntactic category.⁴⁸ What should be considered the criteria for identifying a Direct Object, and particularly for distinguishing Direct Object NPs from Oblique NPs? A typical analysis would suggest two criteria: (i) a Direct Object occurs postverbally without a preposition, and (ii) a Direct Object is passivisable; thus, (10a–b).⁴⁹ Neither of these holds for Obliques—hence (11a–c).

- (10) a. Jack built the house.
- b. The house was built (by Jack).
- (11) a. I meditated in my bedroom.
- b. *I meditated my bedroom.
- c. *?My bedroom was meditated in (by me).

⁴⁶ Cf. also Croft 2001, 53–55.

⁴⁷ Distributional analysis was used in American structural linguistics; cf. Harris 1951, 4–19.

⁴⁸ Cf. Croft 2001, 34–36; 2005, 281; Rice 1987.

⁴⁹ These appear to be the criteria for the use of ‘Object’ in FrameNet; cf. Ruppenhofer et al. 2006, §5.2.3.1.

The distributional pattern in these sentences is shown in table 4.1.

Table 4.1 Distribution patterns for typical Direct Object constructions

	[Sbj V ____]	[____ be V:Pass by Obl]
Direct Object	✓	✓
Oblique	×	×

Source: Adapted by permission of Oxford University Press from Croft 2001, 35, table 1.4.

Distributional analysis is not in itself invalid; indeed, it is fundamental to typological research. Croft’s objections relate to the way in which distributional analysis is used, and the fact that most analysts simply do not adequately take into account distributional *mismatches*. There are two basic flaws, one typological and one logical.

2.3. *The typological flaw: methodological opportunism*

As all syntactic theorists well know, distribution patterns are not, in fact, neat and consistent; there are inevitably construction-specific anomalies, distributional mismatches. For example, the preceding analysis for English Direct Objects and Obliques is only part of the picture. Some postverbal NPs are not passivisable, fulfilling the first criterion, but not the second:

- (12) a. 1997 witnessed the demise of 18 years of Tory rule in Britain.
- b. *The demise of 18 years of Tory rule in Britain was witnessed by 1997. (Croft 2001, 35)
- c. John left the auditorium.
- d. *?The auditorium was left by John. (Rice 1987, 257)

Many Objects of Prepositions (‘Obliques’) are passivisable, fulfilling the second criterion, but not the first:

- (13) a. The house is lived in now. (FrameNet 1.3 data, *live.v*)
- b. The chair was sat in by every person in turn. (Andersen 1971, 3)
- c. The poor and needy were attended to/seen to/administered to/dictated to by the priest. (Rice 1987, 112)
- d. The policeman was swung at by the suspect. (Rice 1987, 93)

Finally, some NPs fulfil both conditions, yet they would not universally be accepted as Direct Objects; thus, while (14a) (active) and

(14b) (passive) are normal and attested, the NP *those early days of marriage* in (14a) is a dubious Direct Object.

- (14) a. They lived those early days of marriage modestly in a one-bedroom flat in Clapham, South London.
 b. Those early days of marriage were lived modestly in a one-bedroom flat in Clapham, South London. (FrameNet 1.3 data, *live.v*)⁵⁰

Thus, taking into account all the data, the actual distribution patterns are shown in table 4.2.

Table 4.2 Actual distribution patterns for Direct Object constructions

	Example	[Sbj V ____]	[____ be V:Pass by Obl]
Direct Object	(10)	✓	✓
Oblique	(11)	×	×
?	(12)	✓	×
?	(13)	×	✓
??	(14)	✓	✓

Source: Adapted by permission of Oxford University Press from Croft 2001, 36, table 1.5.

When the same type of analysis is used with potential lexical categories (Noun, Verb, etc.), distributional mismatches again abound. Thus, as Croft points out, the distributional patterns that purportedly support atomic, primitive categories are not even consistent within a language, let alone across languages. “In fact, if one takes all distributional criteria seriously, one would end up with a very large number of syntactic categories and relations, each of which would have very few members” (Croft 2001, 36).

Nevertheless, most linguists are intent on defining neat, global categories. To do so, given distributional mismatches, they must choose a *subset* of the data on which to base these categories, and explain away those instances that do not fit. The problem, however, is that “there is no justification for deciding which distributional criteria

⁵⁰ Sentence (a), although constructed from (b), is similar to other passivisable sentences in FrameNet: e.g., *Lucille Castineau had lived all her twenty-seven years in the Norman countryside*; and *I do not want to live all my life in an English prison*.

are the ‘right’ ones for establishing syntactic primitives” (Croft 2001, 45). The danger is that such an *a priori* choice will simply squeeze the data into the analyst’s own assumptions; and the inevitable result is that some of the patterns are marginalised or simply ignored. This is the typological flaw: an arbitrary and unjustified choice of criteria, which Croft dubs “methodological opportunism” (2001, 30, 41).

2.4. *The logical flaw: vicious circularity*

The logical flaw with the usual method for arriving at atomic, primitive categories is circularity. “CONSTRUCTIONS ARE USED TO DEFINE CATEGORIES—this is the distributional method. BUT THEN THE CATEGORIES ARE TAKEN AS PRIMITIVE ELEMENTS OF SYNTACTIC REPRESENTATION AND ARE USED TO DEFINE CONSTRUCTIONS—this is the syntactic model of representation. THIS APPROACH IS CIRCULAR” (Croft 2001, 45, emphasis original). Circularity in itself is not necessarily bad; but given the fact of distributional mismatches, this is a vicious circle.⁵¹

In contrast, RCG presents a framework for a grammatical theory which does not assume the existence of atomic, primitive categories. Instead, secondary categories such as Noun or Subject can only be derived with great care, taking into account all the distributional data, as well as the way form and function relate to universal aspects of conceptualisation.⁵²

2.5. *Syntactic relations: real or imaginary?*

Tenet 3 of RCG is stated, and meant, in absolute terms: there are no syntactic relations between elements in a construction. As we saw, there are meronymic relations between elements and their defining

⁵¹ Goldberg (1995, 11) demonstrates this circularity for the fixed-valence view of verbs (e.g., *kick* has a 2-argument sense, etc.). RCG broadens this argument.

⁵² Taylor ultimately concurs with Croft: “There is an important sense in which the categories of adjective and noun (and indeed the other word classes) must be understood with respect to the constructional schemas in which they occur (Croft 1999b). This is not to deny the possibility of entertaining construction-independent characterizations of the word classes, in terms of the nature of the concepts that the word designates . . . Ultimately, however, a word class emerges as a function of its role within a constructional schema. . . . Just as ‘syllable’ emerges as a schematic property of its instances, so also the notion of ‘transitive clause’ emerges as a generalization over expressions of the kind *The farmer shot the rabbit*” (Taylor 2002, 563).

constructions; but the only horizontal relations are semantic. The heart of Croft's argument for this position is as follows:

In Radical Construction Grammar, the various morphosyntactic properties that are taken to express syntactic relations in other theories – case marking, agreement, adpositions, word order, contiguity, and so on – are interpreted as expressing the symbolic links from the element in the phonological pole of the construction to their corresponding components in the semantic pole of the construction. (Croft and Cruse 2004, 286)

In other words, morphosyntactic properties function to assist the hearer to identify the construction as a whole (including its overall symbolic link), to identify the elements of the construction, and to identify either the semantic components or the semantic relations that are symbolised by various morphosyntactic elements.

Croft calls these morphosyntactic properties **strategies** for encoding a situation type (Croft 2003, 14), that is, for encoding a type of dependency between two units in a construction.⁵³ There are a number of strategy types, most notably relational and indexical (or deictic) strategies. Relational strategies, which include case markers and adpositions, denote the semantic relation between the components symbolised by the two elements. Indexical strategies, which include agreement markers, numeral classifiers, and possessive classifiers, 'index' the referent of one of the members of a dependency, and so help to identify one element.⁵⁴ Sentence (15) illustrates this.

(15) תִּקְבֹּר בְּשֵׁבַח טוֹבָה

t-iq-qābēr

2MSG-MEDP-bury\NPRF

bě-šēb-â

LOC-old.age-FSG

tôb-â

good-FSG

"You will be buried at a good old age" (Gen 15:15)

In sentence (15), the preposition *bě* is a relational strategy, indicating a semantic relationship between the burial event and the "good old age"—namely, one of temporal location. The agreement markers *â* on the Noun and Adjective index the semantic argument of *tôb* "good" as "old age." Similarly, the Verb prefix *t* indexes the thematic Agent of the "be-buried" event as the addressee of the statement.⁵⁵

⁵³ In Croft 2001 they are called '(overtly) coded dependencies.'

⁵⁴ For more on strategy types, see Croft 2001, 197–201; 2003, 14–17, 31–42.

⁵⁵ Thus, here the Agent is a component of the semantic structure which does not have a corresponding syntactic element, though it is indexed by the Verb prefix.

Although Croft's detailed argument is beyond the scope of this work (see Croft 2001, chs. 5–6), the key point is that none of these syntactic features has a meaning-less function.

3. *Reconstructing grammatical categories*

RCG is not merely a deconstruction of traditional categories; it also establishes positive principles for theoretically rigorous linguistic analysis and categorisation. This involves comparing constructions and construction-specific elements and roles (both semantic and syntactic), accounting for all the distributional data without privileging any subset of it, and describing described categories (or category prototypes) against the background of the universal patterns and constraints on the way concepts are encoded by grammar.

RCG does not, therefore, present a list of categories and constructions by which the languages of the world—or even one particular language—can be studied. Taylor comments on this aspect of RCG:

It does not promote a new set of theoretical categories, nor does it require of its practitioners that they become fluent in new terminologies and formalisms. In fact, RCG, rather than a theory of syntax, is perhaps better seen as an approach to the study of syntax, and, indeed, of language(s) in general. It offers criteria for a critical understanding of central concepts in syntactic theory, and sets out a framework within which syntactic investigations are to be conducted and evaluated. (Taylor 2004, 321–22)

My purpose here is not to present all the grammatical categories reconstructed by RCG.⁵⁶ I will simply give a brief overview of the RCG approach to two traditional areas of grammar: parts of speech, and heads/arguments/adjuncts. The RCG analysis of these will prove useful, particularly from chapter 7 onward.

3.1. *Parts of speech*

Parts of speech are language-specific, construction-specific categories, defined by the words that can fill particular roles in particular constructions.⁵⁷ From the construction level, they may be schematisable

⁵⁶ I do not cover RCG's treatment of syntactic roles and semantic roles/relations.

⁵⁷ Andersen and Forbes (2006, §II.1) list five different ways of defining parts of speech: "ostensive (by listing); semantic (on the basis of 'meaning'); paradigmatic

to a certain extent. Some word categories, however, may be very specific—as with English *there* in *There is a snake in a grass*, or *it* in *It is raining*.

Croft's account of parts of speech (Croft 1991, 1999a, 2001) sets up most of the key typological principles which undergird his approach to grammatical categories. Although he denies the primitive status of 'Noun,' 'Verb,' and 'Adjective' as categories in any given language, he establishes *typological prototypes* which can be called 'noun,' 'verb,' and 'adjective.'⁵⁸

The basis for doing so is the relationship between the **semantic classes** of lexical items, and the **propositional act** (pragmatic/communicative) functions with which they are used in particular constructions. Words can be categorised into many semantic classes. The three most important for Croft's purposes, however, are objects, properties, and actions. These are defined in table 4.3, using the properties of relationality, stativity, transitoriness, and gradability.

Table 4.3 Semantic characterisation of objects, properties, and actions

	Relationality	Stativity	Transitoriness	Gradability
Objects	nonrelational	state	Permanent	nongradable
Properties	relational	state	Permanent	gradable
Actions	relational	process	Transitory	nongradable

Source: Reproduced by permission of Oxford University Press and the University of Chicago from Croft 2001, 87, table 2.2. Original version, with minor differences: Croft 1991, 65, table 2.4, © 1991 by the University of Chicago.

The three major propositional acts are reference, modification (of a referent), and predication (ascribing something to a referent). Croft's basic hypothesis is that "the semantic classes of OBJECTS, PROPERTIES, and ACTIONS are the TYPOLOGICAL PROTOTYPES of referring, attributive, and predicating constructions respectively" (Croft 2001, 87).

(systemic variations in form); derivational (how affixes convert it from other segments); and distributional (the positions in which it occurs)." Andersen and Forbes themselves use ostensive and paradigmatic methods; Croft uses semantic and distributional criteria.

⁵⁸ See Anstey 2006a for an initial foray into BH (or Tiberian Hebrew) parts of speech from a typological perspective.

In fact, object words can be used for functions other than reference; property words can be used for functions other than modification; and action words can be used for functions other than predication. However, these three pairings of semantic class and propositional act are the *typologically unmarked* combinations; all other combinations are marked. This leads to a cross-linguistically valid way of characterising nouns, adjectives, and verbs—namely, to denote these typologically unmarked combinations:

- (16) a. noun = reference to an object
 b. adjective = modification by a property
 c. verb = predication of an action (Croft 2001, 89)

There are two typological universals (i.e., cross-linguistic patterns) with respect to marked and unmarked combinations of semantic class and propositional act. The first relates to the *structural coding* of a propositional act function, where the structural coding of an expression is any morphosyntactic element that overtly encodes a particular pragmatic function. In informal terms, the typological universal states that the structural coding of typologically marked combinations will be at least as great as, if not greater than, the structural coding of unmarked combinations. In English, for example, a Verb can predicate on its own, as in (17a); but an Adjective requires the Copula *be* in order to predicate (17b), while a Noun requires both *be* and an Article (17c).

- (17) a. John sang.
 b. John **is** happy.
 c. John **is a** carpenter.

The second universal relates to the *behaviour potential* of a category, that is, the richness and range of its grammatical power. The typological universal states that the behaviour potential of typologically unmarked combinations will be at least as great as, if not greater than, the behaviour potential of marked combinations. For example, as example (17) shows, English Verbs can inflect for tense, whereas Adjectives and Nouns used for predication cannot; instead, the tense is marked on the Copula. Conversely, referring Nouns inflect for number (18a). Most Adjectives (18b) and Verbs (18c) used for reference cannot.

- (18) a. The **birds** were singing.
 b. *The **hungries** were chirping / The **hungry** ones were chirping.⁵⁹
 c. **Running** keeps you fit / ***Runnings** keep you fit / **Running** sessions keep you fit.

In other words, non-prototypical (marked) combinations will often have extra morphosyntactic ‘baggage’ to help them function (structural coding universal); and their behaviour will often be restricted or impoverished compared with that of prototypical (unmarked) combinations (behaviour potential universal).⁶⁰

In analysing the lexical classes of a particular language, Croft examines the structural coding and behaviour potential of words (and word types) against a two-dimensional *conceptual space* for parts of speech. A conceptual space, in some typological work, represents a small part of “language-universal conceptual structure” (Croft 2001, 93). For parts of speech, the conceptual space is a mapping between semantic classes and propositional acts. The lexical classes of a given language may then be assessed in terms of how they map onto this conceptual space (via a ‘semantic map’), which shows the structures used by lexical classes to code various functions, and variations in behavioural potential outside the prototypical (unmarked) regions of the conceptual space.⁶¹

To illustrate the way this type of analysis is undertaken, consider the Noun/Adjective distinction in BH, which is seen as weak. They overlap in both form and behaviour—more than is the case with prototypical Adjectives and Nouns in English (cf. *IBHS* §5.2h).

Structural coding and behaviour potential provide a typologically valid way to proceed. We will first compare prototypical BH property words and object words, in both referential and modifying uses. The typologically unmarked cases are shown in (19), with a prototypical object word (*nāhār* “river”) used for reference, and a prototypical property word (*gādōl* “great”) used to modify the referent of the Noun.

⁵⁹ In some cases referring Adjectives can inflect: *I couldn’t see past all the talls*. This does not violate the structural coding universal.

⁶⁰ For an in-depth analysis, including formal definitions and more examples, see Croft 2001, 86–102.

⁶¹ I will not dwell on conceptual spaces; see Croft 2001 and 2003 for a detailed account, and Barðdal 2001 for criticisms in an otherwise positive review.

(19) הַנָּהָר הַגָּדוֹל

han-nāhār hag-gādōl

ART-river ART-great

“the great river” (Deut 1:7)

Property words can be used for reference; and two of the strategies for doing so are an Adjective on its own (20a) and a Nominalised form of the property word (20b).

(20) a. וּבִמְקוֹם גְּדֹלִים אַל-תַּעֲמֹד

*û-bi-mqôm**gədōl-îm**’al=t-a’amōd*

CO-LOC-place|CNST

great-MPL

NEG=2MSG-stand\JUSS

“And do not stand in the place of great [people]” (Prov 25:6)

b. לְךָ יְהוָה הַגְּדֹלָה

*lě-kā**yhwh**hag-gədull-â*

DAT-2MSG

yhwh

ART-greatness-FSG

“Yours, O YHWH, is the greatness” (1 Chr 29:11)

In terms of structural coding, the referring Adjective in (20a) has no extra coding compared with a referring Noun. The Nominalised property word in (20b), however, is formed with the Feminine suffix הַ (-â)—a noted pattern for Nominalised properties (IBHS §6.4.2).

In terms of behaviour potential, both referring property terms in (20a–b) can inflect for number, like referring Nouns. Nevertheless, Croft points out an important semantic difference between the modifying Adjective in (19) and the referring Adjective in (20a): in the former case, it denotes the property itself, whereas in the latter it denotes an object (in this case, people) possessing the property (Croft 2001, 67).

In the reverse direction, prototypical object words can be used as modifiers. Two ways of doing so are with a Construct-Absolute construction, and with the Relative Pronoun *’ăšer* along with a Preposition; both are illustrated in (21).

(21) וְאַל-תִּדְבֹּר אֵלֵינוּ יְהוּדִית בְּאָזְנֵי הָעָם אֲשֶׁר עַל-הַחוֹמָה

*wě-’al=tě-dabbēr**’ēl-ēnû**yěhūdît*

CO-NEG=2MSG-speak\JUSS

ALL-1PL

Judahite

*bě-’ozn-ē**hā-’ām**’ăšer**’al=ha-ḥômâ*

LOC-ear-F.DU|CNST

ART-people

RPRN

SUPS=ART-wall

“And do not speak Judahite to us in the hearing of the people who [are] on the wall” (Isa 36:11 = 2 Kgs 18:26)

In the Construct-Absolute construction *'oznē hā'ām* “the ears of the people,” there is no extra structural coding on *hā'ām* for its modifying function—though in fact the structural coding is on the construction as a whole, with a destressing and phonological reduction of the Construct element. However, the modifying function of *haḥômâ* “the wall” is coded with *'āšer 'al* “who [are] on”. The behaviour potential in both cases is the same as that of prototypical Adjectives.

These examples are merely to provide a taste of an analysis of Nouns and Adjectives in BH. Nevertheless, they confirm the problems that are encountered when parts of speech are taken as global or universal categories, such that words must be placed into strongly-delineated primitive categories. The solution is not to deny any parts of speech, however; the RCG solution is a conceptual and distributional analysis which explores the range of pragmatic functions possible for different word types, and maps the variations in structural coding and behaviour potential.

3.2. *Heads, arguments, adjuncts, and valence in traditional grammar*

Before we look at the RCG approach to heads, arguments, and adjuncts, the traditional definitions need to be mentioned—not only to provide some background, but because they are important to FrameNet, which uses the terms in a traditional way.

The **head** of a phrase (or construction), if it has one, is the ‘central’ element which has the same distribution as the phrase as a whole, or which determines its distribution. For example, the Head of *big dog* is *dog*, since *I saw a big dog* can be reduced to *I saw a dog*, but not (in English) **I saw a big*. The head is sometimes said to **govern** the other elements in the phrase.

Many words are “intrinsically relational,” in that they must combine with other words or phrases to form grammatically and semantically complete units (Fillmore, Johnson, and Petruck 2003, 236). The elements of a construction which are required to combine with such a relational term are called its **arguments**. The term typically applies to the elements required by a verb, but can be extended to other parts of speech; for example, *dog* is an argument of *big* in *the big dog*.⁶² Arguments are divided into **internal arguments**, which lie within the

⁶² For the Cognitive Grammar account of relational expressions (including adjectives, verbs, and participles/infinitives), see Langacker 2000b, 8–12.

phrase headed by the term, and **external arguments**, which lie outside this scope. In particular, the subject of a verb is considered an external argument, while the object is an internal argument. Many arguments are substantive (referring) expressions, like the Object in (22a). Some verbs, however, may take an adverbial (or ‘oblique’) argument, such as the Prepositional Phrase in (22b), or a clausal (predicative) argument, as in (22c).⁶³

- (22) a. She **kicked** [the ball].
 b. It **lives** [in the garden].
 c. I **believe** [that you are the winner].

A word’s combinatorial requirements—the number and kinds of arguments with which it must combine—is the **valence** of the word. As we will see in chapter 5, describing the valence of a relational LU lies at the heart of FrameNet’s approach to lexical semantic analysis.

A **complement** is, effectively, an internal argument. Complements are traditionally seen to ‘complement’ or ‘complete’ the meaning of another element—again, particularly of a verb within a clause.

As well as obligatory constituents (complements/arguments), a construction may also contain optional constituents—so-called **adjuncts** or **modifiers**, which “may be removed without the STRUCTURAL identity of the rest of the construction being affected” (Crystal 2003, 11–12). Together, the arguments and adjuncts attached to a term are called **dependents**.⁶⁴

⁶³ Crystal 2003, 88; Ruppenhofer et al. 2006, §5.2.3.

⁶⁴ In fact, the terms are used in various ways in different linguistic models (cf. Matthews 1997; Crystal 2003; for BH, see *IBHS* §10.2a; *BHRG* §12.3, §33.1–3). For example, ‘argument’ is used with different (though not entirely incompatible) meanings in Case Grammar, generative grammar, predicate calculus, and Government-Binding Theory (Crystal 2003, 32). Matthews (1981, chap. 6) proposes a three-way distinction between complements, ‘peripheral’ elements, and adjuncts.

‘Complement,’ in its broadest sense (as I am using it here), “is a very general notion, subsuming all obligatory features of the PREDICATE other than the verb” (Crystal 2003, 88). However, it is also commonly used with a more restricted definition, “to refer only to the ‘completing’ function of structures following the verb *to be*” (Crystal 2003, 88). Thus, *She is a doctor* has the structure Subject-Verb-Complement. A further distinction is then made between complements of the subject and those of the object; for example, *Noah was a righteous man* (נֹחַ אִישׁ צַדִּיק, Subject Complement), and *She called his name Seth* (וַתִּקְרָא אֶת־שְׁמוֹ שֵׁט, Object Complement).

Note that Andersen and Forbes (2006, §III.2) define ‘complement’ in the general way, as “a CONSTITUENT that is viewed as *completing* another CONSTITUENT”; but in practice, they consciously use the term in the restricted way (with subject comple-

The idea of valence is most typically applied to verbs, which generally require one or more arguments. In English, *sleep* is a monovalent Verb, also called a one-place predicate, since the only argument required is the sleeper; thus, compare (23a) and (23b):

- (23) a. He sleeps.
b. *He sleeps it.

Give is a trivalent Verb or three-place predicate, with required arguments for the giver, the givée, and the thing given. Some Verbs, such as *rain* (as in *It rained*), do not require any arguments, and are called zero-place predicates.⁶⁵

However, it is now widely assumed that verbs also predicate about a referential argument for the event itself (Löbner 2002, 104). That is, the Verb *rain* refers to a RAINING event, which is its primary (and only) argument; and the Verb *sleep* refers both to a SLEEPER and to a SLEEPING event (or state). Various sentence constituents and grammatical features, tense/aspect and certain adverbial modifiers, modify this event referent:

- (24) a. It **rained** [heavily].
b. [He] **slept** [on and on].

Thus, while verbs are labelled zero-place, one-place, etc., in reality there is one more argument than indicated by the label.

The idea of valence is not limited to verbs. Adjectives and some nouns require at least one complement/argument. Adjectives, both grammatically and semantically, are not complete on their own, but function to modify a NP, so that the adjective relates (semantically) to the same referent as the NP.⁶⁶ The NP can therefore be considered an argument of the adjective. In addition, so-called two-place adjectives

ments, object complements, and various other categories). Some of their identified 'object complements' do not seem entirely appropriate: for example, הוּא יְשׁוּפֵךְ רֹאשׁ "he will bruise you on the head" (Gen 3:15), where the suffixed pronoun hardly seems to need 'completing.' Andersen and Forbes will in due course publish a grammar, in which their grammatical system will be explained in far more detail; and hopefully this will explain such matters.

⁶⁵ Note that in the sentence *It rained*, the 'expletive' *it* does not refer to any entity, but is needed to fulfil the grammatical subject requirement of the sentence type. Consequently, the Verb does not predicate about any external arguments.

⁶⁶ Löbner describes adjectives as "parasitic," since "the argument of a one-place adjective is neither a referential argument of the adjective nor is it specified by a separate argument term" (Löbner 2002, 107–8).

require a second argument, usually (in English) in the form of a PP Complement. These include adjectives of spatial orientation (25a), adjectives of experience or emotion (25b), and the special case of comparative adjectives (25c).

- (25) a. the **right** [side] [of his chest]
 b. [He] was **afraid** [of catching pneumonia]
 c. [An elephant] is **bigger** [than a horse].

Unlike adjectives, nouns have an inherent argument: they predicate about the referent of the noun itself. For this reason, nouns are considered (at least) one-place predicates. However, some nouns require an extra argument for semantic and syntactic completeness, and so are two-place predicates. Nouns and NPs that denote events (such as *purchase* and *withdrawal*) are often relational, like their verbal counterparts. Nouns that specify relationships of various kinds—called ‘relational nouns,’ which rather overloads the term ‘relational’—also require at least one complement: as well as relating to the noun’s own referent, they also predicate about the entity to which/whom the referent is related. Relational nouns include kinship terms (*brother*, *uncle*), other personal relationships (*friend*, *rival*), and more abstract relational terms (*name of*, *height of*, *discontent with*).⁶⁷ In English, many of these abstract Nouns are cognates of Adjectives with equal valence; thus, compare (25b) with (26).

- (26) [his] **fear** [of catching pneumonia]

Even simple object-class nouns may be relationally construed. For example, *lid* is almost always construed in relation to the container it covers, as in *lid of X* (Langacker 2000b, 21); and similarly, *ticket to* and *student of*.

Many non-relational (one-place) nouns are much simpler to analyse, since they have no valence requirements. Nevertheless, all nouns may be modified by adjuncts, which often correspond to construed *properties* of the noun’s referent. As we will see, even though FrameNet focuses on relational LUs, it still has a useful role to play with one-place nouns.

⁶⁷ Examples from Löbner 2002, 106–7 and Crystal 2003, 89. Unlike adjectives used predicatively, I do not consider nouns and NPs used predicatively (as in *John is a doctor*) to require complementation; see below for more.

3.3. *Heads, arguments, adjuncts, and valence in RCG*

The definition of a head, and the distinction between arguments and adjuncts, is not as simple as the previous section suggests—particularly if strictly syntactic/distributional definitions are sought. Both Cognitive Grammar and RCG maintain that the only tenable definitions must be semantic/conceptual; and their definitions differ somewhat from traditional (especially generative) ones.⁶⁸

To reinterpret headship, Langacker first introduces the notion of a profile determinant—or **profile equivalent** in Croft's terms. A profile equivalent is defined as follows:

- (27) *Profile equivalent*: In a combination X + Y, X is the PROFILE EQUIVALENT if X profiles/describes a kind of thing profiled/described by X + Y. (Croft 2001, 257)

According to Langacker, “a *head* is simply the profile determinant at a given level of organization” (Langacker 2000b, 21). For example, the head of a NP (i.e., in Langacker's account, an expression functioning to profile a ‘thing,’ or the result of conceptual reification) is the component which profiles the same ‘thing’; thus, the Head of *people with problems* is *people*. The head of a PP is the element which profiles the relationship profiled by the whole expression; thus, the Head of *with problems* is the Preposition *with*.⁶⁹

However, Croft argues that it is not entirely adequate. There are a number of constructions for which the profile equivalent is not immediately obvious. For example, with a NP like *the man*, there is ongoing disagreement over whether the Head is the Noun *man* or the Article *the*.⁷⁰ There are strong arguments for both words as referring items profiling a ‘thing’; and a semantic argument (like profile determinant/equivalent) does not resolve the issue.⁷¹

⁶⁸ See in particular Langacker 1987a, 308–9; 2000b, 20–21; Taylor 2002, 229–38; Croft 2001, chap. 7. Apart from a more nuanced definition of ‘head,’ Croft's ultimate definitions are largely consistent with those of Cognitive Grammar.

⁶⁹ Note that the profile of the head is broader or more general/schematic than the profile of the whole phrase.

⁷⁰ If the latter view is accepted, the phrase is reclassified as a Determiner Phrase.

⁷¹ “It appears to be the Article that . . . fix[es] reference and therefore most closely denotes the same thing as the whole phrase, namely a thing whose identity is established and is situated in the domain of discourse and the speaker's and hearer's shared knowledge” (Croft 2001, 258).

Croft's solution is based on the observation that, in many cases containing two profile equivalents, only one of them is the **primary information-bearing unit** (PIBU) of the construction. That is, only one is a 'content' word (Croft 2001, 258). In the NP above, *man* is more contentful than *the*. Croft's definition of headship, then, combines the two notions:

- (28) A (*semantic*) *head* is the profile equivalent that is the primary information-bearing unit, that is, the most contentful item that most closely profiles the same kind of thing that the whole constituent profiles. (Croft 2001, 259)

This identifies *man* as the Head of *the man*; but an expression like *men and women* is (as in traditional analyses) Headless.

Having defined 'head,' we are now in a position to reassess arguments and adjuncts/modifiers.⁷² In essence, an argument fills a role (or "elaborates a component substructure") in the semantic structure of the head; conversely, the head fills a role in the semantic structure of an adjunct.

The semantic structure of an expression is, in effect, the internal structure of the domain/frame against which it is profiled, whose 'component substructures' include the participants, properties, and events involved in its construal.⁷³ As we have seen, relational expressions like verbs and adjectives naturally have an internal structure; but many nouns are also construed relationally (e.g., *lid*). Thus, we can think of heads, arguments, and adjuncts in relational terms: a head is a relational term with respect to an argument, whereas an adjunct is a relational term with respect to its head. Langacker expresses this in terms of **dependent** and **autonomous** elements: an argument is autonomous relative to its head, since the argument is a stand-alone concept, but a head is dependent on its arguments for conceptual completeness. Conversely, a head is autonomous relative to any adjuncts, but an adjunct is dependent on the head for its conceptual completeness. In the case of the head-argument relationship, this reverses the traditional meaning of 'dependent.'

Modifying Taylor's Cognitive Grammar description slightly (Taylor 2002, 231), we may use the following definitions:

⁷² Croft essentially follows Langacker at this point.

⁷³ In Frame Semantics terms, the component substructure consists of the frame elements of the evoked frame.

- (29) *Argument*: In an expression $X + Y$, which is headed by X , Y is an argument of X if Y elaborates a substructure in the semantic structure of X .
- (30) *Adjunct*: In an expression $X + Y$, which is headed by X , Y is an adjunct (or modifier) of X if X elaborates a substructure in the semantic structure of Y .⁷⁴

Consider, for example, the following sentence (from Croft 2001, 272):

- (31) Randy chased the dog in the park.

Here, *Randy* and *the dog* are both Arguments of *chased*, since the underlying semantic structure of *chase* includes participants (component substructures) for the CHASER and CHASED entities. However, the component substructure of *Randy* has no CHASE-EVENT; *Randy* (and likewise *dog*) is thus Autonomous with respect to *chase*. Conversely, *in the park* is an Adjunct of *chased*, since the semantic structure of *in* is a relationship including a FIGURE and a GROUND—here, elaborated by *chase* and *the park*, respectively.

Nevertheless, the argument/adjunct distinction is in reality a continuum, because semantic structure is *subject to construal*. The frame profiled by a term need not have a fixed set of semantic components. Semantic components vary in their *salience*, so that highly salient components will always be included in the semantic structure, whereas components with lower salience may or may not be evoked.

Thus, a *chasing* event invariably involves a CHASER and CHASED entity; but it also occurs at a particular spatiotemporal location. The TIME and PLACE are much less salient components; but they may easily be included in characterising the event. So then, *in the park* does elaborate a semantic substructure of *chase*; but *chase* elaborates a far more salient substructure of *in the park*. We should therefore say that *in the park* is *more* of an Adjunct than an Argument of *chased*.

Consequently, valence is both *relative* and *gradient* (Croft 2001, 274).⁷⁵ Moreover, a construction unit may be simultaneously an argument and an adjunct with respect to the head, as in (32).

- (32) father of twins

⁷⁴ Langacker and Taylor use the terms 'complement' and 'modifier' rather than 'argument' and 'adjunct,' respectively. Here, the difference is insignificant. Note that Taylor goes on to define more relationships, including 'apposition.'

⁷⁵ Cf. also Langacker 1987a, 278. For a detailed usage-based study, see Thompson and Hopper 2001; and with respect to BH, see Muraoka 1979.

The Head of the phrase is *father*, and *of twins* is an Adjunct, since *of* is a relational (dependent) term whose FIGURE substructure is elaborated by *father*. However, *father* is a relational Noun, whose CHILD substructure is elaborated by the Argument of *twins*. In this case, each unit has a highly salient substructure which is elaborated by the other.

Having surveyed constructional approaches to grammar, and RCG in particular, we now return to the theme of lexical semantics. The two topics will come together in chapter 7.

CHAPTER FIVE

FRAME SEMANTICS AND FRAMENET

Of all the recent frame-based approaches to semantics, Fillmore's Frame Semantics is appealing for several reasons. It is now fairly well-developed, and is being applied in the FrameNet project at the International Computer Science Institute at Berkeley.¹ Implementations of FrameNet are also starting to appear in other modern languages, including German,² Spanish,³ Japanese,⁴ and Chinese.⁵ Although it has some weaknesses (some of which will be addressed in Part Two), the model and tools used in FrameNet enable a thorough semantic analysis of syntagmatic relationships—which, compared with paradigmatic relationships, tended to be somewhat neglected in 'field' approaches, including the well-known WordNet project (Fellbaum 1998).⁶ Moreover, the theory and its application was made very accessible in an issue of the *International Journal of Lexicography* dedicated to Frame

¹ More information about Frame Semantics and FrameNet, with the most up-to-date versions of their theoretical framework and data, is available on the FrameNet website (<http://framenet.icsi.berkeley.edu/>). The project is into its second development phase, known as "FrameNet II" (Fillmore, Wooters, and Baker 2001). At the time of writing, the most recent full release of the FrameNet data was Release 1.3, dated August 2006—though the data on the website is continually being updated. The latest version of the theoretical framework is Ruppenhofer et al. 2006. Most references to FrameNet data in the following chapters relate to the Release 1.3; but where the differences are significant, I have used the online data.

² Boas 2001, 2002, 2005a, 2005b; Erk, Kowalski, and Padó 2003; Burchardt et al. 2006b. Online: "SALSA II: The Saarbrücken Lexical Semantics Acquisition project" (Univ. of Saarland, <http://www.coli.uni-saarland.de/projects/salsa/>) and "German FrameNet" (Univ. of Texas at Austin, <http://gframenet.gmc.utexas.edu/>).

³ Subirats Rüggeberg and Petruck 2003; Subirats Rüggeberg 2004. Online: "Spanish FrameNet: An on-line lexical resource and its application to Spanish NLP" (Autonomous Univ. of Barcelona, <http://gemini.uab.es:9080/SFNsite>).

⁴ Ohara et al. 2003; Ohara et al. 2004. Online: "Japanese FrameNet: An online Japanese lexicon based on Frame Semantics" (Keio Univ., <http://jfn.st.hc.keio.ac.jp/>).

⁵ This is a bilingual English-Chinese project (BiFrameNet), rather than a Chinese FrameNet *per se*. Online: "BiFrameNet" (Hong Kong Univ. of Science & Technology, <http://www.cs.ust.hk/~hltc/BiFrameNet/>).

⁶ Fellbaum, in the introduction to the volume (1998, 4–5), comments on this particular limitation, in contrast with Fillmore and Atkins's early frame-based work (Fillmore and Atkins 1994).

Semantics and FrameNet.⁷ Finally, whereas some modern linguistic approaches are highly technical and require specialised study, the basic theory underlying FrameNet is fairly intuitive and explicable in ordinary language. This makes it neither better nor worse as a linguistic theory; but it does make it more likely to be a helpful tool for biblical scholars generally, and not BH linguists alone.⁸ For these reasons and more, I decided to use FrameNet as the starting-point for my own methodology, and in this section I will provide an overview of Fillmore's Frame Semantics and the project that has arisen from it.⁹

Fillmore, Johnson, and Petruck summarise Frame Semantics and its implementation in FrameNet as follows:

The central idea of Frame Semantics is that word meanings must be described in relation to *semantic frames* – schematic representations of the conceptual structures and patterns of beliefs, practices, institutions, images, etc. that provide a foundation for meaningful interaction in a given speech community. FrameNet identifies and describes semantic frames, and analyzes the meanings of words by directly appealing to the frames that underlie their meanings and studying the syntactic properties of words by asking how their semantic properties are given syntactic form. (Fillmore, Johnson, and Petruck 2003, 235, emphasis original)

This quotation highlights the two main areas of importance in Frame Semantics and FrameNet. The first, which will be described in §1 below, is frame-based lexical analysis. This involves three key organisational concepts: *semantic frames* (or simply *frames*), **frame elements**

⁷ *International Journal of Lexicography* 16/3 (2003).

⁸ The fact that Frame Semantics tends not to rely on a highly technical descriptive apparatus does not mean that it is incompatible with other more demanding theories; see, for example, the integration of Lexical Functional Grammar into a FrameNet-like tool in Frank and Erk 2004. Moreover, for those suspicious of notational simplicity, Frame Semantics has strong connections with Construction Grammar (Fillmore, Kay, and O'Connor 1988; Kay and Fillmore 1999; Kay 2002), which does have an elaborate notational system.

⁹ Note that various aspects of Fillmore's Frame Semantics have changed as a result of the FrameNet project, so that parts of the earlier theory have been modified in more recent publications. In particular, the earlier definition of a 'frame' as a conceptual structure consisting of a number of 'schemas' (Atkins 1995, 27) seems to have been abandoned. For literature on Frame Semantics and FrameNet, see Fillmore 1968, 1976, 1982, 1985; Fillmore and Atkins 1992; Atkins 1995; Petruck 1995, 1996; Boas 2001; Fillmore, Johnson, and Petruck 2003; Fillmore, Petruck, et al. 2003; Baker, Fillmore, and Cronin 2003; Atkins, Fillmore, and Johnson 2003; Atkins, Rundell, and Sato 2003; Boas 2005b; Ruppenhofer et al. 2006; Fillmore and Baker 2010. Some of Fillmore's early papers have been republished in Fillmore 2003.

(FEs),¹⁰ and *lexical units* (LUs). The second area of importance, which will be described in §§2–3, is the correlation of semantic structures and syntactic patterns, which is done through text corpus **annotation** and the subsequent identification of **valence patterns**.

This second area of interest marks FrameNet out from most other accounts and uses of semantic frames. It is also an excellent starting-point for investigating a number of phenomena which are currently of interest to cognitive linguists, including metaphor and metonymy, image schemas, blending, prototypicality and category structures, and figure-ground effects. Indeed, the last decade has seen increased interest in studying all these linguistic phenomena in BH. However, their application is mostly restricted to the semantic side of language, with very little attention paid to how these phenomena are expressed in the grammar of BH. FrameNet provides a model for at least beginning to investigate this relationship.

In this chapter, I will outline Frame Semantics and FrameNet as they currently stand. In Part Two, I will offer some critiques and suggestions based on the material in chapters 3 and 4.

1. *Frames, frame elements and lexical units*

1.1. *Lexical units*

A lexical unit, as defined by Cruse, is one discrete sense for a lexeme—“the union of a single sense with a lexical form” (Cruse 1986, 80). In Frame Semantics, as for Cruse, the LU rather than the lexeme is the basic, fine-grained unit for lexical analysis—though, of course, a lexeme’s various senses may be closely related to one another. Importantly, however, a LU in frame semantics is connected to a frame (or a set of related frames); and the different senses of a word (its LUs) will generally correspond with different background frames (Fillmore, Johnson, and Petruck 2003, 236).¹¹ As a convenient notation, we may identify a LU by the frame and the lexical form separated by a period; for instance, [SEARCH].חֵקֶר.

¹⁰ Given Croft’s distinction between (syntactic) elements and (semantic) components (ch. 4 §1.2), I would prefer the term ‘frame component’; however, ‘frame element’ is the established term, and there should be no ambiguity.

¹¹ In the SALSA II literature (Erk and Padó 2004; Padó and Lapata 2005), a LU linked to the frame it evokes is called a frame-evoking element (FEE).

In FrameNet, a sentence is always analysed and annotated with respect to one LU and the frame(s) that it evokes. (A sentence may, of course, be analysed multiple times, from the perspective of different LUs; see §6 on page 138.) The linguistic item (usually a ‘word’) which instantiates the relevant frame-evoking LU is called the annotation **target**; and in the examples below, the target will usually be indicated by bold face text.

1.2. *Frames*

The most important conceptual and organisational unit in Frame Semantics is the frame. Any given frame will have linked to it a number of LUs, not necessarily all of the same part of speech, but all of which evoke that conceptual structure. Frames also fit into a larger organisational structure; as we shall see, frames are related to one another in various ways, thus forming a complex conceptual network.

In FrameNet, far more effort is given to defining frames than to defining LUs. For most LUs, the lexical entry simply reproduces a definition from the Concise Oxford Dictionary (Pearsall 1999). The discrepancy may not be because LUs are less important than frames, but rather because of the project’s particular contribution to lexicography. Nevertheless, in Croft’s version of the theory, with his tripartite system of word form, concept profile and base/frame, equal attention is paid to defining both the concept profile and the frame, since (as Langacker has argued extensively) both are necessary for understanding a LU.¹²

Currently, frames in FrameNet can include LUs with one of five English parts of speech: Verb, Adjective, Noun, Preposition, or Adverb. This does not mean that any single frame may have LUs from all five parts of speech. The semantic nature of the frame will often constrain the kinds of LUs that will typically evoke it. However, some frames include LUs with a range of parts of speech; for example, the [COMPATIBILITY] frame is evoked by Verbs like *agree* and *match*, Ad-

¹² It must be said that Fillmorean Frame Semantics seems to have a weaker notion of ‘profile’ than the theories of Langacker and Croft. Nevertheless, Fillmore does distinguish at times between the frame evoked by a LU and the LU’s particular profile within the frame; for example: “The basic assumption of Frame Semantics as it applies to the description of lexical meanings is that each word (in a given meaning) **evokes** a particular frame and possibly **profiles** some element or aspect of that frame” (Fillmore, Wooters, and Baker 2001, §2; see also Fillmore and Baker 2010, 317).

jectives like *compatible* and *consistent*, and Nouns like *harmony* and *incompatibility*.¹³

1.3. *Frame elements*

The connection between LUs and their background frame(s) is provided by frame elements (FEs), which are the kinds of participants or props that may be involved in the conceptualisation of a semantic frame.¹⁴ FEs are not generalised semantic concepts; rather, FEs are defined with respect to a particular frame, and the frame itself will be described largely in terms of its FEs. As a simple example, the [TRANSFER] frame has three FEs: DONOR, THEME, and RECIPIENT. Fillmore et al. then describe the [TRANSFER] frame itself as follows: “Someone (the DONOR) is in possession of something (the THEME), and then causes someone else (the RECIPIENT) to be in possession of the THEME, perhaps by causing the THEME to move to the RECIPIENT” (Fillmore, Johnson, and Petruck 2003, 237).

As well as being integral to a frame’s description, FEs are integral to the process of analysing the LUs that evoke the frame. We will return to this shortly.

Frame elements are **semantic roles** or participant roles. However, Fillmore identified two types of semantic roles in the course of his work: **thematic roles**, and **frame-specific roles**.¹⁵

¹³ In this book, I focus mainly on verbs, nouns, and adjectives; see the FrameNet data for examples of target Prepositions and Adverbs. Note, however, that many Prepositions evoke frames pertaining to space, time, and motion; and in some cases, FrameNet uses a figure-ground analysis (see n. 11 on p. 36).

¹⁴ Frame elements were called “categories” in Fillmore and Atkins 1992, and “attributes” in Barsalou 1992. Barsalou defines an attribute as “a concept that describes an aspect of at least some category members” (Barsalou 1992, 30). Langacker’s “focal elements” or “participants” (Langacker 2000b, 8) are similar, although he tends to focus on the figure/ground organisation of participants in a conceptual relationship; thus, his main focal elements are the *trajector* (the most salient element) and the *landmark* (the second focal element, if there is one). The trajector/landmark alignment imposed by an expression pertains to which element is profiled against the other as its background. For example, the prepositions *in front of* and *behind* profile the same (usually spatial) relationship between two entities; they differ only in their choice of trajector and landmark. (In fact, FrameNet’s analysis of spatial prepositions is very similar: the two core FEs are the FIGURE and the GROUND.)

¹⁵ In Fillmore, Johnson, and Petruck 2003, frame-specific roles are called *situational roles*, in contrast with semantic (i.e., thematic) roles. I use the term *semantic roles* in a more general way, to include both frame-specific and thematic roles.

Thematic roles, also known as deep case roles or theta roles (θ -roles), were proposed by Fillmore in his earlier work on Case Grammar (Fillmore 1968). The Case Grammar theory “consisted of the proposal that syntactic deep structures are best expressed as configurations of ‘deep cases,’ these given general semantic-role names such as Agent, Patient, Goal, etc.” (Fillmore, Johnson, and Petruck 2003, 240). Thus, as a contribution to analysing verbs within a generative-transformational framework, Fillmore devised a method for first describing the semantic roles that formed an essential part of a verb’s meaning, and then describing rules for turning these into grammatically realised constituents (subjects, objects, etc.). That is, he was interested in correlating semantics and syntax. Importantly, because these ‘deep cases’ were assumed to be general in nature, it was thought that they were relatively small in number, and could (in theory) be exhaustively listed. A typical list of thematic roles might include some or all of those listed in table 5.1.¹⁶

However, there has always been a great deal of disagreement over the correct set of thematic role labels—or even whether they are expressible in terms of a small set.¹⁷

As Fillmore’s work on lexical semantics progressed,¹⁸ he became increasingly convinced that a small set of generalised roles was inadequate for describing complementation patterns. Instead, his emphasis shifted from thematic roles to frame-specific or situational roles—“roles as they fit the meaning of the semantic frames associated with individual verbs or sets of verbs, such as the ‘lover’ and ‘lovee’ associated with the predicate *love*” (Lambrecht 1995, 153).¹⁹ The focus here is not on a single, general list, but on the *particular* semantic functions associated with a given word. Frame-specific roles are therefore assigned names or labels appropriate to their particular frame.

¹⁶ For discussion and examples of thematic roles, see Somers 1987; Dowty 1991; Croft 1991, chap. 4. Kirk Lowery (1995) proposes a list of semantic roles for BH.

¹⁷ After Fillmore’s early work in the 1970s, thematic roles rather ‘fell out of fashion’ in the world of linguistic semantics. However, since the 1990s they have started to gain wider acceptance. Dowty, in an influential article (1991), argues that the best model is one in which there are only two role prototypes or “cluster-concepts,” which he calls “Proto-Agent” and “Proto-Patient,” and that more fine-grained classes follow from these. As will become apparent, I would argue the reverse: that Proto-Agent and Proto-Patient are semantic generalisations derived from frame-specific roles.

¹⁸ Cf. Fillmore 1976, 1982, 1985.

¹⁹ Dowty (1991, 550) calls these “individual thematic roles.”

Table 5.1 Typical thematic roles

Role	Description
AGENT	the volitional, purposeful instigator of an action or event
EFFECTOR	the instigator of an action or event, though not necessarily on purpose
STIMULUS/ FORCE	the inanimate, non-volitional instigator of an action or event
EXPERIENCER	a sentient being that experiences a perception, feeling or other state
PATIENT	an entity that is in a state or condition, or undergoes a change in state or condition
THEME	an entity that is in a location, or undergoes a change in location
INSTRUMENT	something used by an agent in effecting the action or event
MEANS	a sub-action initiated by an agent for the purpose of effecting the whole action/event
LOCATIVE	a spatial locus of a state of affairs
GOAL	a destination, the end point of a state of affairs
PATH	route (i.e., intervening points) between the source and goal of a state of affairs
SOURCE	the point of origin of a state of affairs
BENEFACTIVE	the participant for whose benefit an action is performed
RECIPIENT	an animate/quasi-animate entity to whom something is given or sent

This gives frame-specific roles (FEs) a rather arbitrary or “brute force” character (Fillmore and Atkins 1992, 84). However, this by no means invalidates them, particularly if something like a culture-specific, frame-based model of language is close to the mark. As Fillmore and Atkins argue: “In describing the meaning of a word we are necessarily engaged in describing the categories expressed by the phrases built up around that word, interpreted against a particular background frame” (Fillmore and Atkins 1992, 84). Indeed, just as constructions are the primitive units of grammar, so Croft argues that frames are the basic units of semantic structure. Semantic roles stem from our experience of the various participants, and their interaction, in particular situations and events. Thus, all roles are properly either

frame-specific, or are secondary schematic roles derived from frame-specific roles by a process of categorisation. Radical Construction Grammar is therefore paralleled by Radical Frame Semantics (Croft 2001, 62; 2005, 287).

Moreover, even if there *is* a generalisable list of prototypical thematic roles (whether universal or language-specific), frame-specific roles turn out to be a more powerful tool for semantic and syntactic description, at least in many instances. Not only do they allow a richer and fuller description of the participants and props involved in a given conceptualisation, but they also enable different lexical units within a frame to be more readily compared—so that apples really can be compared and contrasted with oranges (within the [FRUIT] frame, of course).

In fact, as a Radical Frame Semantics approach would predict, frame-specific roles can be related to thematic roles using the notion of domain/frame matrices or frame relations.²⁰ Frames with certain broad similarities are categorised as subtypes of more schematic frames such as [ACTION] or [MOTION]; and as part of this process, the conceptually specific roles in the child frames are broadened to abstract/schematic roles, such as AGENT and PATIENT, in the higher-level frames.²¹ Thematic and frame-specific roles are thus not mutually exclusive: broadly speaking, they pertain to more schematic and more specific frames, respectively.

To illustrate some of the advantages of frame-specific roles in complex frames, using one of Fillmore's favourite examples, consider the following two frames in English: [COMMERCE BUY], which includes a LU for *buy*, and [COMMERCE SELL], which includes a LU for *sell*. These frames are related to one another via a common, more schematic parent, [COMMERCE GOODS TRANSFER].²² We will take the following sentences as exhibiting prototypical usage of *buy* and *sell*:

²⁰ See §4.1 below.

²¹ Cf. Gildea and Jurafsky 2002, 249. This structure parallels that of the 'construction'; indeed, as we will see in ch. 7, thematic roles in schematic frames are closely related to the components of schematic constructions.

²² There are two reasons why transactions of this sort make for interesting examples: they typically involve a number of roles, and both the buyer and the seller can be seen as agentive participants in the process. Note that FrameNet currently places [COMMERCE BUY] and [COMMERCE SELL] in a 'Uses' relation with [COMMERCE GOODS TRANSFER], rather than a parent-child 'Inheritance' relation. Frame relations will be described below (§4.1).

- (1) a. Judy bought a car from her uncle for \$5000.
 b. The salesman sold John a watch for \$80.

Using thematic roles, we could note that with the Verb *buy*, the grammatical Subject expresses the AGENT of the event, the Object expresses the PATIENT, the SOURCE is expressed in a Prepositional Phrase with *from*, and the INSTRUMENT is expressed in a Prepositional Phrase with *for*.²³ With *sell*, the grammatical Subject is similarly the AGENT of the event, the Primary Object is the RECIPIENT, the Secondary Object is the PATIENT, and the *for* Prepositional Phrase the INSTRUMENT.²⁴ This is expressed in table 5.2.

Table 5.2 Comparing *buy* and *sell* using thematic roles

	AGENT	PATIENT	SOURCE	RECIPIENT	INSTRUMENT
<i>buy</i>	Sbj	Obj	PP- <i>from</i>		PP- <i>for</i>
<i>sell</i>	Sbj	Obj-2		Obj-1	PP- <i>for</i>

All of this may be somewhat interesting, and may show something of the prototypical force-dynamic sense of the Verbs; but it does not tell us much about the syntactic and conceptual relationship between them.

Using frame-specific roles, on the other hand, we note that the [COMMERCE GOODS TRANSFER] frame has four roles or FEs: BUYER, SELLER, GOODS, and COST, which are all inherited by the daughter frames [COMMERCE BUY] and [COMMERCE SELL].²⁵ In the sample *buy* sentence, the grammatical Subject is the BUYER, the Object is the GOODS, the SELLER is expressed in a Prepositional Phrase with *from*, and the COST is expressed in a Prepositional Phrase with *for*. With

²³ On the distinction between MEANS and INSTRUMENT, see Croft 1991, 177–79.

²⁴ While I have referred to two ‘Objects,’ FrameNet classes the Secondary Object of a Ditransitive Clause as a ‘dependent,’ in the traditional (rather than Cognitive Grammar) sense (Ruppenhofer et al. 2006, §5.2.3.1). In the current example, I will work with FrameNet’s non-Radical grammatical model, which assumes global syntactic roles and relations, though my labels are somewhat different.

²⁵ The final FE is called MONEY in FrameNet, although in fact there are a number of cost-related FEs, including MONEY, RATE and MEANS. I have simplified the case by grouping them all together under the label COST. The idea of inherited frames and FEs will be covered in §4.1.

sell, the grammatical Subject is the SELLER, the Primary Object expresses the BUYER, the Secondary Object is the GOODS, and the COST is expressed in a Prepositional Phrase with *for*.²⁶ This is expressed in table 5.3.

Table 5.3 Comparing *buy* and *sell* using frame-specific roles

	BUYER	SELLER	GOODS	COST
<i>buy</i>	Subject	PP- <i>from</i>	Obj	PP- <i>for</i>
<i>Sell</i>	Obj-1	Subject	Obj-2	PP- <i>for</i>

This immediately provides a semantic or conceptual mapping between the Arguments and Adjuncts of the Verbs, making it obvious how the Verbs are related to one another via their sister frames. Instead of assigning the same, fairly uninformative label AGENT to the Subjects of each Verb, the frame-specific analysis shows that the Subject of *buy* corresponds conceptually to the First (or Indirect) Object of *sell*, while the Subject of *sell* corresponds conceptually to the Object of a PP Dependent of *buy*. This meaning relation is missed by analysis using thematic roles (Fillmore, Johnson, and Petruck 2003, 238–39). For both GOODS and COST, there is little difference between *buy* and *sell* in the coding used.

Not only does frame-specific syntactic analysis relate the perspectives of these two Verbs on the event, it also highlights a difference in the relative *salience* of the the various FEs for the meaning of each word.²⁷ The table above suggests that the zero-coded GOODS FE is highly significant for both *buy* and *sell*. We would also expect, however, to see a difference between the two Verbs with respect to the relative salience of the BUYER and SELLER FEs, since for *buy* the BUYER occupies a more important slot than the SELLER, while the situation is reversed for *sell*. This expectation is confirmed by sample sentences. For both *buy* and *sell*, the subject (BUYER and SELLER, respectively) is very difficult to omit, as is the GOODS FE; however, the

²⁶ Note that I have rather informally mixed, in FrameNet terms, ‘grammatical functions’ and ‘phrase types’ in this analysis. We will make a more careful distinction presently.

²⁷ Cf. Fillmore, Johnson, and Petruck 2003, 238.

SELLER PP can be readily omitted in *buy* sentences (*Judy bought the car*), while the BUYER indirect object can be readily omitted in *sell* sentences (*The salesman sold a watch*). As we shall see later, FrameNet relates this to a difference between core and peripheral FEs.

So far, we have only applied frame-specific roles to verbs. However, the analysis can be extended to other parts of speech, so that the Verbs can be compared with the Nouns *purchase* and *sale*, as in the following sentences:

- (2) a. Judy made a \$5000 purchase.
b. The sale of the painting for \$10,000 improved his financial position.

Some of the same roles are evident in the Arguments or Modifiers of *purchase* and *sale*.²⁸ Thus, in (2a) we note that the Modifier \$5000 expresses the COST, while the Subject of the sentence (*Judy*) expresses the BUYER—though this constituent is not in the NP headed by *purchase*, and so is marked as an External Argument. In (2b), the PP *Dependent of the painting* expresses the GOODS, and the PP *Dependent for \$10,000* expresses the COST.

We can incorporate these results into table 5.3, as in table 5.4.

Table 5.4 Comparing different parts of speech using frame-specific roles

	BUYER	SELLER	GOODS	COST
<i>buy</i>	Subject	PP- <i>from</i>	Obj	PP- <i>for</i>
<i>sell</i>	Obj-1	Subject	Obj-2	PP- <i>for</i>
<i>purchase</i> (n.)	External NP			Modifier
<i>sale</i>			PP- <i>of</i>	PP- <i>for</i>

Using this method, we can build up a detailed picture of the correlation between the syntactic and semantic patterns of a word's use, and compare these patterns between semantically related words. In fact, this activity—the analysis and comparison of syntactic and semantic ‘valence patterns’—is central to Fillmore's Frame Semantics as applied in FrameNet.

²⁸ While thematic roles are usually applied to verbs, Chris Barker and David Dowty (1993) have argued that thematic roles can also be applied to relational nouns. The same advantages of frame-specific roles apply here, however.

1.4. Core and peripheral FEs

As we saw in chapter 4 (§3.2), valence applies only to the arguments of a word—those which are required to complete a word conceptually and grammatically. A widespread assumption in linguistic theory, including Frame Semantics, is that the number of arguments of a LU is constant. This is why, in traditional predicate terminology, a LU can be labelled a one-place predicate, two-place predicate, and so on.

In FrameNet, this assumption has a frame-based, semantic counterpart: that the frame evoked by a word will have a stable set of conceptually obligatory, or **core**, FEs. Those outside this set are labelled **peripheral**.

Returning to our earlier examples, the [COMMERCE BUY] frame (exemplified by *buy*) has two core FEs, corresponding to the BUYER and GOODS roles; while the [COMMERCE SELL] frame (exemplified by *sell*) also has two core FEs, corresponding to the SELLER and GOODS roles. This can be seen in the semantically and syntactically odd sentences which result from omitting them from our earlier examples on page 115:²⁹

- (3) a. ?Judy bought from her uncle for \$5000.
b. ?Bought a car from her uncle for \$5000.
- (4) a. ?The salesman sold [to] John for \$80.
b. ?Sold John a watch for \$80.

The problem here is not merely grammatical; it is that it is difficult to conceive of an act of *buying* without including either the buyer or the item bought in the conceptualisation. The grammatical requirements stem from conceptual, or semantic, requirements. This is why, in general, “non-core elements cannot be nuclear arguments (subject or object) of target verbs, and they frequently are adverbs or prepositional phrases” (Ruppenhofer et al. 2006, §3.3.1).³⁰

However, peripheral FEs are grammatically optional. For example, while an act of *buying* also logically requires both a SELLER and a

²⁹ In special contextual circumstances, some of these sentences can be made coherent. However, these circumstances relate to ‘null instantiation’ (see below).

³⁰ There are exceptions. In English, there are various so-called Subject selection constructions: for example, “English allows frame elements that are situated between the end-points of a causal chain to occur as subjects” (Ruppenhofer et al. 2006, §3.2.2.4). As a result, non-core Means or Instrument FEs may be used, in certain situations, as subject: thus, [*John*] **opened** the door; but also [*The key*] **opened** the door right away.

COST (and similarly *selling* requires a BUYER and a COST), these elements are not as salient in our conceptualisation of the event. We can background them to the extent that they are barely present conceptually.³¹ Thus, omitting them from our example sentences does not result in any oddness—even if the context tells us nothing about who or what they are:

- (5) a. Judy bought a car from her uncle.
 b. Judy bought a car for \$5000.
 c. Judy bought a car.
- (6) a. The salesman sold John a watch.
 b. The salesman sold a watch for \$80
 c. The salesman sold a watch.

While these FEs are optional, they are also highly frame-specific. The optional SELLER in (5a) only makes sense in the context of a frame relating to commercial transactions. In other event frames, such as [ARREST], [DESTROY], [EMPLOY], and so on, a SELLER is incongruous.

Other optional FEs, however, express more generalised notions, and may be present in a wide variety of frames. For example, all event-based frames may include FEs for TIME, PLACE, MANNER, DEGREE, and so on, which are usually evoked in adverbial phrases: *Judy bought the car in the morning*.

Optional arguments (both frame-specific and general) allow even one-place predicate terms, such as artifact nouns, to be given a frame-semantic analysis. For example, FrameNet includes the Noun *shirt* in the [CLOTHING] frame, whose sole core FE is GARMENT. Obviously, in the case of Nouns that evoke this frame, the GARMENT FE is simply the concept profile for the Noun itself. However, in the FrameNet analysis of *shirt*, there are also six peripheral FEs which occur in the corpus sentences: MATERIAL (7a), STYLE (7b), SUBREGION (7c), USE (7d), WEARER (7e), and a more general DESCRIPTOR (7f).

- (7) a. [cotton] shirt
 b. [polo] shirt
 c. shirt [with buttons at the neck]
 d. [tennis] shirt
 e. [Samson's] shirt
 f. shirt [soaked in blood]

³¹ See below, however—it may not be quite so easy to omit the cost from the conceptualisation.

The distinction between core and peripheral FEs is very useful, although in chapter 6 we will see that there are some difficulties with FrameNet's account.

1.5. *Extra-thematic FEs*

Apart from core and peripheral FEs, FrameNet identifies a third type: **extra-thematic** FEs. These are of a somewhat different nature to core and peripheral FEs (which we may group together as 'thematic FEs'). Ruppenhofer et al. explain:

Extra-thematic frame elements situate an event against a backdrop of another state of affairs, either of an actual event or state of the same type . . . or by evoking a larger frame within which the reported state of affairs is embedded . . . Note that extra-thematic frame elements are understood not to conceptually belong to the frames they appear in. We take them to properly be frame elements of other abstract frames that take them as well as the targets that they modify as arguments. (Ruppenhofer et al. 2006, §3.2.1)

The list of extra-thematic FEs in FrameNet is quite long.³² The examples in (8) are illustrative of the kind of semantic phenomena expressed by extra-thematic FEs. In each example, the target is in bold text, the extra-thematic element is in brackets, and the extra-thematic FE is indicated at the start. The bracketed element in each case extends the normal frame associated with the Verb, so that a secondary event or state of affairs is construed.

- (8) a. ITERATION: Lee **called** the office [three times].
 b. RECIPIENT: John **bought** [himself] a new car.
 c. BENEFICIARY: His father **assembled** the plane [for him].
 d. LOCATION OF PROTAGONIST: The witnesses **saw** the robbery [from their car].
 e. CO-PARTICIPANT: He was **arrested** [with his brother] in 2002.
 f. INTERNAL CAUSE: Kim **frowned** [in concentration].
 g. DEPICTIVE: Jess **walked** out [with her head held high].
 h. CONTAINING EVENT: Two people were **killed** [in the accident].
 i. EXPLANATION: [Wearing my father's cap] I was **spotted** immediately by Bill.³³

³² See Appendix A in Ruppenhofer et al. 2006, from which most of the following examples were taken or adapted.

³³ The bracketed phrase is actually tagged in FrameNet with two extra-thematic FEs: DEPICTIVE and EXPLANATION.

At first glance, it is not obvious how extra-thematic FEs relate to *lexicographical* description, nor that they form a coherent category. Ruppenhofer et al. note that there is a sense in which “extra-thematic FEs are introduced by separate, constructional targets.” They continue: “Since, however, the constructions that introduce extra-thematic FEs are so tightly bound together with the structures introduced by regular targets, we believe that it is appropriate to annotate them as if from the point-of-view of the target” (Ruppenhofer et al. 2006, Appendix A). This suggests that extra-thematic FEs may well hover in the difficult region in between Lexicon and Grammar.

Nevertheless, at least in some cases the ability of an extra-thematic FE to occur with a particular LU seems to be significant for describing the LU’s ‘shape.’ Recent analyses of Resultative constructions (especially Goldberg 1995 and Boas 2003) support this: at least with respect to Resultatives, the ability of a Verb to take a Resultative phrase is not entirely predictable, and is thus lexicographically relevant.

Another lexicographically significant instance of an extra-thematic FE concerns the Verbs *give* and *buy*. Both of the relevant frames in FrameNet—[GIVING] and [COMMERCE BUY], respectively—contain a RECIPIENT FE. Sentences (9a) and (9b) show how each Verb typically instantiates its frame’s RECIPIENT (using FrameNet annotation):³⁴ as the Object in a Ditransitive construction for *give*, and as an Oblique in a Transitive construction for *buy*. However, *buy* also allows a Ditransitive construction, as in (9c).

- (9) a. [I]_{NP,Ext} **gave** [her]_{NP,Obj} [some earrings]_{NP,Dep}.
 b. [I]_{NP,Ext} **bought** [some earrings]_{NP,Obj} [for her]_{PP-for,Dep}.
 c. [I]_{NP,Ext} **bought** [her]_{NP,Obj} [some earrings]_{NP,Dep}.

In both (9a) and (9c), the postverbal NP *her* instantiates the RECIPIENT FE. However, there is a significant difference between the two: whereas a giving event inherently involves the RECIPIENT, the same is not true for a buying event: it inherently involves the BUYER, GOODS, and SELLER, but the RECIPIENT is extrinsic to the event.

This can be expressed using a causal chain analysis of verb meaning (Croft 1991, 159–81). The causal chain denoted by *give* is delimited by the DONOR and RECIPIENT, with the THEME as an intermediary participant. The causal chain denoted by *buy*, however, is delimited

³⁴ The subscript labels will be explained in §2.

by the BUYER and GOODS; the RECIPIENT *her* is “the endpoint of an action that causally follows the verbal causal segment” (Croft 1991, 179).³⁵ That is, a buying event does not entail the sub-action of giving the GOODS to the RECIPIENT; but the intended recipient of such an event can be incorporated into the *buy* construction.

In the annotation of sentence (9a), then, the postverbal NP would be marked as a core FE, whereas in (9b) and (9c) it would be marked as extra-thematic. We may also note that the postverbal NP in (9c), unlike that in (9a), is not easily Passivisable;³⁶ thus:

- (10) a. [She] was **given** [some earrings].
 b. *?[She] was **bought** [some earrings].³⁷

In FrameNet, then, there are two basic distinctions. The broader distinction is between extra-thematic and thematic FEs. Thematic FEs may then be broken down into core and peripheral FEs. These distinctions are helpful—though in chapter 6, I will argue for a more nuanced understanding of FE categories.

These categories are also most relevant to event and state frames. Extra-thematic FEs are not relevant to frames for artifacts or natural kinds; and many such frames will contain only one core FE, for the concept profile itself (e.g., the GARMENT FE in the [CLOTHING] frame).

1.6. Missing frame elements: null instantiation

Core (obligatory) FEs are not always instantiated. In Frame Semantics, this situation is called **null instantiation** (NI).³⁸ There are three

³⁵ The quote is from a definition of the BENEFACTIVE (OR MALEFACTIVE) thematic role. In fact, on Croft’s analysis, sentence (9c) differs from sentence (9b) in that the verb’s causal chain in (9c) is extended to include the RECIPIENT (Croft 1991, 206–9). Nevertheless, in the prototypical use of *buy* the RECIPIENT is beyond the verb’s causal chain.

³⁶ By FrameNet’s own criteria, this should discount *her* in sentence (9c) from being the Object (cf. Ruppenhofer et al. 2006, §5.2.2). In any case, in chapter 4 (§2) we saw the flaws with the standard criteria.

³⁷ Verbs in other frames pertaining to the procurement or production of an entity (such as *make*, *find*, *cook*, *steal*, etc.) could profitably be analysed along the same lines—that is, for their compatibility with a RECIPIENT FE, and their passivisability.

³⁸ Cf. Ruppenhofer et al. 2006, §3.2.3; Atkins, Fillmore, and Johnson 2003, 268–69; Fillmore, Johnson, and Petrucci 2003, 245–46. ‘Null instantiation’ corresponds to various other terms in linguistic literature, including implicit arguments (of verbs in particular; Crystal 2003, 32) and latent elements (Matthews 1981, 38–45). Croft

types of NI; however, only the latter two types are relevant to lexicographical description.

In **Constructional Null Instantiation** (CNI), the omission of a FE is licensed by the grammatical construction in which the LU appears. Common examples (in English) include omitted Agents with Passive Verbs (*It was given to me*), and omitted Subjects with Imperative Verbs (*Come here!*).³⁹ Such omissions are not considered relevant to lexicographical description, since the constructions which produce them are not deemed to be specific to particular lexemes, but rather are compatible with schematic classes; for example, any fientive Verb may be used as an Imperative, in which case the Agent will not be instantiated.

In **Definite Null Instantiation** (DNI), an obligatory FE is not expressed, but the hearer is expected to retrieve it from the context.⁴⁰ For example, the Verb *try* in the [ATTEMPT] frame requires a GOAL expression, which is most commonly a *to*-marked Infinitive Verb Phrase: *I tried [to catch the ball]*. In the appropriate context, it may be omitted:

- (11) A. Did you catch the ball?
B. I **tried** [Ø].

The near-synonym *attempt* does not permit such an omission, although the Noun *attempt* in the support construction *make an attempt* does:⁴¹

- (12) A. Did you catch the ball?
B. *I **attempted** [Ø].
B'. I *made* an **attempt**.

These differences between *try*, *attempt*, and *make an attempt* are purely conventional—they are not predictable from grammatical or semantic principles, but pertain to the usage patterns of the LUs.

defines latency as “the requirement for a definite interpretation of a dependent if that dependent is left syntactically unexpressed” (Croft 2001, 273).

³⁹ In Hebrew, of course, the subject is very often indexed by the verb form, rather than by an independent pronoun. This should not be seen as CNI, however, since the subject is grammatically specified.

⁴⁰ DNI is also called anaphoric instantiation, since the missing FE is provided by means of an anaphoric connection. Cruse calls it “contextual deletion” of a latent element (Cruse 1986, 110 n. 18).

⁴¹ Support constructions are discussed in §4.3 below.

Thus, the contextually-licensed omissibility of the GOAL is a lexicographically relevant feature of *try*.

In **Indefinite Null Instantiation** (INI), a FE that is conceptually obligatory is left entirely unspecified, with no assumption that the relevant information is known in the context.⁴² For example, the Verb *eat* in the [INGESTION] frame is a two-place predicate, requiring both an INGESTOR and INGESTIBLES, and allowing a number of optional FEs, including INSTRUMENT. Compare the following sentences:⁴³

- (13) a. [Fred] is **eating** [spaghetti] [with a fork].
 b. [Fred] is **eating** [spaghetti].
 c. [Fred] is **eating** [with a fork].
 d. [Fred] is **eating**.

When the INSTRUMENT is not specified, as in (13b) and (13d), it will not figure in the hearer's construal of the sentence. Logically, Fred is probably using some kind of instrument to eat the spaghetti, but this is not salient in interpretation. However, when the INGESTIBLES are not specified, as in the intransitive uses in (13c) and (13d), the result is somewhat different. *Eating* is always understood as "eating *something*." Thus, although the INGESTIBLES need not be identified by the hearer in interpreting the sentence, they are still construed as present in the situation described.⁴⁴

As with DNI, INI is an idiosyncratic, lexically specific feature, and thus relevant to lexicographical description; hence, compare examples (13c–d) with the following:

- (14) a. *[Fred] is **devouring** [with a fork].
 b. *[Fred] is **devouring**.

Croft (2001, 275–80), while endorsing the notion of NI, has criticised Fillmore's account⁴⁵ by arguing that NI is always a feature of particu-

⁴² INI is sometimes called "existential null instantiation" (Ruppenhofer et al. 2006, §3.2.3.2). Cruse refers to it as "indefinite deletion" (Cruse 1986, 110 n. 18).

⁴³ Cf. Löbner 2002, 106.

⁴⁴ Note that a quite different explanation is required for the transitive and intransitive uses of *close*, as in [*He*] **closed** [*the door*] and [*The door*] **closed**. These sentences involve two separate senses of *close*, one which construes an agent acting on the door and causing the event, and another which construes the door as agentive—hence the different syntactic positions of the CONTAINER PORTAL (to use the FrameNet FE label for *the door*). In contrast, the examples for *eat* all involve the same sense of the Verb.

⁴⁵ His critique is based on the account as presented in Fillmore 1986 and Fillmore and Kay 1993.

lar *constructions*, and never of particular LUs. Fillmore and Kay argue that since only a subset of Verbs in English allow for DNI Objects or Obliques, DNI is 'lexical.' Thus, verbs such as *arrive*, *win*, and *lose* allow for DNI Objects/Obliques, while *bend*, *break*, *destroy*, *create*, *move*, and *lift*, do not, as the following sentences illustrate.

- (15) a. The Germans lost **the war**.
- b. The Germans lost $\emptyset_{\text{DNI}}$.
- (16) a. The children arrived **at the station** at ten o'clock.
- b. The children arrived $\emptyset_{\text{DNI}}$ at ten o'clock.
- (17) a. She lifted **the corner of the bed**.
- b. *She lifted $\emptyset_{\text{DNI}}$.

Croft argues, however, that these examples only look lexical because "the construction accepts only a limited set of subclasses of words" (Croft 2001, 277). Instead, he gives a constructional analysis of sentences (15)–(17):

English has a Transitive DNI construction, with the form [SBJ VERB $\emptyset_{\text{DNI}}$] and a semantic structure specifying a highly accessible participant corresponding to the overt Object in the ordinary English Transitive construction [SBJ VERB OBJ]. Unlike the Transitive construction, however, the Transitive DNI construction is restricted to a subclass of verbs including *win*, *lose*, etc. (Croft 2001, 278).

From the perspective of construction grammar, in which constructions are the primary units of linguistic description, this argument has merit. However, it by no means invalidates the applicability of NI to lexico-semantic description. Indeed, LUs themselves are constructions; and if a complex schematic construction has, as one of its properties, a list of LUs that may fill a given role (e.g., TransVerb), then equally a particular LU may have, as one of its properties, a list of the schematic constructions in which it may be used.

Thus, Croft's argument raises the difficult problem of the relationship between LUs and larger grammatical constructions, and the role of constructions in lexicology—a problem to which we will return in chapter 7. At this stage, it suffices to suggest that DNI is both constructional and lexical, depending on whether the lexicon-grammar relationship (or continuum) is being viewed from the lexicon pole or the grammar pole. From the grammar pole, DNI is a property of the English Transitive DNI construction, and the English Transitive DNI construction is restricted to a subclass of verbs (*win*, *lose*, etc.). Alternatively, from the lexicon pole, the English verb *win* can be used in

a number of different constructions, including the Transitive DNI construction, whereas *lift* may not be used in this construction. Therefore, the ability of the LU *win* to be used in the Transitive DNI construction is relevant to its description. More generally, DNI and INI are relevant to the description of a LU insofar as they are relevant to cataloguing the constructions in which a LU may be used.

Croft's argument does, however, force a re-examination of the distinction between CNI and other forms of NI. Is this distinction valid, if all NI is in fact constructional? The solution is, not surprisingly, that the distinction is one of degree. All NI relates both to a complex construction, and to one or more units of that construction; but CNI is the limiting case, where the schematic NI construction accepts the full set of (e.g.) Verbs accepted by the equivalent non-NI construction (or, conversely, where all Verbs that are compatible with the non-NI construction are also compatible with the NI version). Thus, CNI can be understood as *purely* constructional NI.

NI (or NI constructions) can occur frequently with some words, particularly frame-bearing nouns (e.g., *purchase* in [2a] on page 117, where the obligatory GOODS FE is omitted). However, it is sometimes difficult to decide on the type of NI, or indeed whether NI is involved at all.⁴⁶ Despite these difficulties, the categories are nevertheless helpful for lexicographical analysis.

2. *FrameNet* annotation

The major activities associated with FrameNet lexicography can be notionally divided into two groups. The first relates to identifying the frames evoked by LUs, and defining the relevant frames, FEs and LUs. The second major activity is sentence annotation.⁴⁷

Annotation involves selecting sentences containing the particular target LU under consideration, and 'tagging' various sentence constituents for their relation to the target. The main types of grammatical information marked for a constituent are its **phrase type** (PT) and

⁴⁶ For further discussion, see Ruppenhofer et al. 2006, §3.4.3, as well as my critique below (ch. 6 §3). I will argue that, contrary to FrameNet's approach, context must be considered to resolve ambiguities with regard to NI.

⁴⁷ The ordering of these two groups of activities is for explanatory purposes. In practice, the process is cyclic.

its **grammatical function** (GF) relative to the target.⁴⁸ The main piece of semantic information marked is the FE that it instantiates (visually indicated, in the HTML release, by colour-coding). In essence, then, each sentence constituent which corresponds to a FE in the target's frame is annotated with a triple, indicating its FE, PT and GF.⁴⁹

Sometimes a single sentence constituent will instantiate more than one FE. In other cases, a phrase instantiating one FE will contain a sub-constituent that expresses a different FE. This is called 'conflation.' Consider the following examples (with the frame indicated at the start):⁵⁰

(18) [CHANGE OF LEADERSHIP]: We **ousted** [the mayor].

(19) [REVENGE]: He **avenged** [Pedro's death].

In sentence (18), the Object NP (*the mayor*) instantiates both the OLD LEADER and the ROLE FEs. In other sentences, these may be separated: *We ousted Jones as mayor*. In sentence (19), the Object NP (*Pedro's death*) instantiates the INJURY FE, and also contains a Proper Noun (*Pedro*) expressing the INJURED PARTY.⁵¹

2.1. *Phrase types and grammatical functions*

PT labels are absolute, in that they categorise a sentence constituent without reference to the target. FrameNet includes PTs for NPs (e.g., Standard NP, Possessive NP), PPs, Finite and Non-finite VPs, Finite and Non-finite Complement Clauses, Subordinate Clauses, Adjective Phrases, Adverb Phrases, Quantifiers, and Quotes.

⁴⁸ The distinction between "distributional units" and "functional units," used in the research for the *Stuttgart Electronic Study Bible* (Talstra and Hardmeier 2004), roughly corresponds to that between PTs and GFs.

⁴⁹ The main annotated corpus used by FrameNet (the British National Corpus [BNC]) contains part-of-speech information, and the FrameNet software uses an algorithm to assign the PT and GF for each constituent tagged. These automatic labels may require correction by the annotator. The SALSA II German FrameNet project has the distinct advantage of beginning with the TIGER corpus, which is syntactically annotated. Not only does this reduce the work of semantic annotation, but it has allowed the development of a much easier 'point-and-click' visual interface for this work (Erk, Kowalski, and Padó 2003; Erk, Kowalski, Padó, and Pinkal 2003; Burcharth et al. 2006a, 2006b).

⁵⁰ Cf. Ruppenhofer et al. 2006, §3.2.4.

⁵¹ In FrameNet, only one FE in a conflation situation is assigned a PT and GF; the other is tagged on a secondary annotation 'layer.' There seems to be little reason for omitting the PT on the second constituent, other than the design of the database.

GFs labels, on the other hand, describe the grammatical (i.e. syntactic) relationship between a constituent and the target word. Thus, using the role/relation distinction from chapter 4, FrameNet assumes the existence of syntactic relations. Each target type has a list of potential GFs: target Verbs may have an Object and other Dependents (PPs, VPs, etc.); target Adjectives may have a Head Noun and various Dependents; target Nouns may have a Genitive Determiner (e.g., *your*), a Quantificational Determiner, a post-target Appositive NP, and other post- and pre-target Dependents; target Adverbs may have a Head and Dependents; and target Prepositions may have an Object.⁵² In addition, any target may have a so-called External Argument, which “covers situations in which phrases outside of the maximal phrase headed by the target word are linked functionally to the target word” (Ruppenhofer et al. 2006, 5.2.1). For instance, the traditional ‘subject of a verb’ is labelled as an External Argument.

The PTs and GFs used in FrameNet are not meant to yield an exhaustive syntactic analysis of sentences, but rather provide a useful description of the grammatical requirements of a target word. I will not describe them in more detail,⁵³ because in chapter 7 we will reconsider them in light of RCG (and Cognitive Grammar). Moreover, even if we were to retain the FrameNet syntactic model, the categories would not transfer directly to BH.

2.2. *Frame-bearing words, slot-fillers, and ‘Gov-X annotation’*

This method of annotating sentences for PT, GF and FE is most useful for *frame-bearing* words—that is, words whose use evokes some structured conceptual frame(s). Other words do not evoke a frame, or evoke much simpler and less structured frames. Thus, as with so many linguistic notions, the frame-bearing (or frame-evoking) nature of words is a graded property.

According to the FrameNet collaborators, the distinction between more and less frame-bearing words corresponds roughly with the distinction between relational and non-relational predicates, or between governors and dependents, in the traditional sense (Ruppen-

⁵² The Dependent GFs are very general, covering both Arguments and Adjuncts of various kinds. This is because the distinction between Arguments and Adjuncts is covered by the core/non-core status of FEs (Ruppenhofer et al. 2006, §5.2.3).

⁵³ See Ruppenhofer et al. 2006, §§4–5.

hofer et al. 2006, §3.1, §3.8). In particular, they claim that artifact nouns are only marginally frame-bearing.

This rough correspondence must not be pressed too far. Certainly, artifact nouns typically do not require complementation, so have no meaningful valence pattern—the frames they evoke only have one core FE, and so do not have the same type of structure as those for relational predicates. However, they may well still evoke a rich experience-based frame, as we saw earlier with *restaurant* (page 49).

(20) We're going to a restaurant tonight.

Restaurant is a 'one-place' predicate, but evokes a group of concepts (BUILDING, WAITER, MENU, ORDER FOOD, EAT), structured according to ordinary experience. Thus, in (20), the noun *restaurant* is at least as frame-evoking as the relational predicator *go*.

Moreover, when it comes to peripheral FEs, there is no real difference in status between those typically assigned to artifact nouns and many assigned to event nouns/verbs. The difference simply reflects the nature of (prototypical) objects and events, respectively. Objects tend to have size, shape, colour, material, and so on, whereas events tend to have temporal and/or spatial features, as well as degree, manner, and so on.⁵⁴ In terms of 'propositional acts,' object properties relate to modification of a referent, and event features relate to modification of a predication.

Finally, artifact nouns can be *coerced* to behave relationally, when used in appropriate constructions.

Prototypical nouns, that is, objects, have a semantic valency of zero. Because of this, in any context in which they are forced to behave as if they have a valency of one, some semantic relation that will hold between the noun and its "argument" will have to be COERCED or "construed" (Langacker 1987a, 1987b) so that the predicated noun can be "about the" subject noun phrase. (Croft 1991, 69)

⁵⁴ Cf. Anstey 2006b, 62–63. In the FrameNet literature, FEs associated with non-relational predicates are distanced from those for relational predicates: the former "do not have exactly the same meaning" as the latter (Ruppenhofer et al. 2006, §3.2.1). Regarding peripheral FEs for slot-filler nouns, the FrameNet documentation describes these as "reflecting a kind of qualia structure of the artifacts" (§3.8; the terminology comes from Pustejovsky 1995). However, this is not so different from the nature of peripheral FEs in event frames. In terms of core FEs, see ch. 6 §2 below on the issue of concept profiles for event frames: again, this minimises the essential difference between these and the single core FE for artifact or natural kind frames.

Croft goes on to explore the various semantic relations which are construed in such cases, the most common of which are class membership (*John is a thief*) and identity (*John is the thief*).

Despite these qualifications, the lack of core FEs for syntactic dependents (in the traditional sense), in contrast with their governors, is significant. A non-relational LU will often function as a ‘slot-filler’—“a referring expression that is a frame element of a frame determined not by itself but by a governor” (Ruppenhofer et al. 2006, §3.1). That is, slot-fillers are autonomous constituents that are only marginally frame-evoking. A slot-filler will be a member of a group of conceptually related words (a ‘semantic field’), but not a structured frame.

In FrameNet, the way slot-fillers are annotated differs slightly from that outlined above. For slot-fillers, the primary purpose of analysis is to discover the host frames in which they appear, and the FEs that they instantiate in those frames.⁵⁵ To enable this, FrameNet uses so-called ‘Gov-X annotation,’ in which the following constituents are marked:

- The slot-filler is marked as the target (as usual).
- The frame-evoking governor of the slot-filler is tagged as “Gov.”
- The sentence constituent that contains the slot-filler, and that fills a FE in the governor’s frame, is simply tagged as “X.” It is not annotated with the FE label, since the FE itself is not in the target’s frame.

For example, the following sentences might be annotated with respect to the Nouns *tower* and *castle* in the [BUILDING] frame (cf. Ruppenhofer et al. 2006, §3.8):

- (21) a. He [built]_{GOV} [two tall **towers**]_X.
 b. Design and [construct]_{GOV} [the **castle**]_X.

Slot-fillers may also be annotated for peripheral property-like FEs. In sentence (21a), *tall* could be tagged with a HEIGHT FE, if this is deemed a regularly salient property of buildings. This allows a non-relational LU to be tagged as both a somewhat-autonomous and a somewhat-relational constituent.⁵⁶

⁵⁵ Of course, a similar analysis may be undertaken in the other direction: we may seek to discover, for a frame-evoking predicate, what are the typical slot-fillers for a given FE.

⁵⁶ Cf. ch. 4 §3.3 (p. 103).

3. Valence description

When these analytical activities are completed—defining frames, FEs, and LUs, and annotating sentences—the results can be used to generate a **valence description** for each LU. These are “corpus-based formal descriptions of the syntactic and semantic combinatory properties of the LU” (Fillmore, Petruck, et al. 2003, 299). They are relatively simple; yet they encapsulate useful information for lexical analysis. Figure 5.1 illustrates the valence description of a simple sentence with respect to the target LU [QUARREL].*argue*.

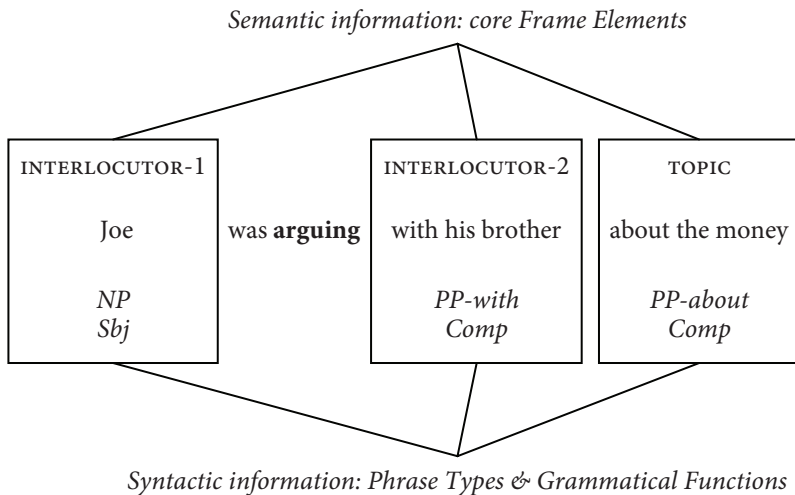


Figure 5.1 Frame-semantic analysis of a [QUARREL].*argue* instance. Reproduced by permission of Oxford University Press from Atkins, Fillmore, and Johnson 2003, 256, fig. 1.

FrameNet defines several concepts related to this sentence analysis: *FE configuration*, *valence group*, *valence pattern*, and *valence description*. A FE configuration is the group of core FEs realised in one sentence.⁵⁷ The FE configuration for figure 5.1 is shown in figure 5.2 on page 132.

⁵⁷ In fact, in the online FrameNet data, occasionally peripheral FEs are included in a FE configuration (e.g., with *cook* and *stew* in [APPLY HEAT]).

INTERLOCUTOR-1	INTERLOCUTOR-2	TOPIC
----------------	----------------	-------

Figure 5.2 FE configuration of a [QUARREL].*argue* sentence

A valence group is one FE together with its grammatical realisation (PT and GF); and the set of valence groups realised in one sentence is a valence pattern. The valence pattern for the sentence in figure 5.1, consisting of three valence groups, is shown in figure 5.3.

INTERLOCUTOR-1 NP Subject	INTERLOCUTOR-2 PP- <i>with</i> Complement	TOPIC PP- <i>about</i> Complement
---------------------------------	---	---

Figure 5.3 Valence pattern for a [QUARREL].*argue* sentence

Finally, a valence description is the set of all valence patterns realised by one lexical unit.

The FrameNet software enables automatic generation of valence descriptions from the sentence annotations in the database. Valence descriptions are more powerful than traditional subcategorisation frames, which simply describe the syntactic complementation patterns of verbs. Frame-semantic valence descriptions correlate syntactic patterns with semantic information.⁵⁸ Thus, for a given LU, they show not only the syntactic patterns (or constructions: see chapter 7) with which they are used, but how the accessible conceptual roles are instantiated in these patterns. These can be compared across the LUs in a frame, to see the ways in which the conceptual structure of the frame is expressed in the language, and to identify nuanced differences between LUs. This information is the goal of Frame Semantics.

4. More FrameNet concepts

While §§1–3 cover the central aspects of FrameNet’s frame-semantic analysis, it has various other mechanisms which extend its semantic capabilities. I will mention only three.

⁵⁸ Cf. Atkins, Rundell, and Sato 2003, 348.

4.1. *Frame relations and FE relations*

FrameNet posits several types of semantic relation, primarily between frames, but also between FEs within a frame.⁵⁹

FE-to-FE relations are used to indicate cases in which several FEs within a frame are dependent on one another. In some frames there may be a number of FEs *one or more of which* is necessary to fulfil the valence requirements. For example, various motion frames require one or more of the SOURCE, GOAL, and PATH. Together they form a ‘coreness set.’⁶⁰

Frame-to-frame relations serve as a way of describing the broad and complex cognitive connections which underpin the use of a language, much like Langacker’s domain matrices.

The *Inheritance* and *Uses* relations in FrameNet both pertain to the way a frame may be related to more abstract or schematic frames: a child frame inherits from a parent frame if it is a more specific elaboration of the parent. In true inheritance, every FE in the parent frame will correspond to a similar (perhaps more conceptually specific) FE in the child frame. In multiple inheritance, a child frame inherits from more than one parent frame.

The *Uses* relation has a very open and flexible definition: it is applied when “a particular frame makes reference in a very general kind of way to the structure of a more abstract, schematic frame” (Ruppenhofer et al. 2006, §6.1.6). In FrameNet 1.3, this relation is used either for cases which do not quite satisfy the requirements for Inheritance (e.g., not all the FEs in the parent frame pertain to the child), or for those in which “a part of the scene evoked by the Child refers to the Parent frame.”⁶¹

The *Subframe* and *Precedes* relations are used to describe complex events which can be broken down into several subevents. For example, the [TRIAL] frame has three subframes for the stages in the legal trial process: [COURT EXAMINATION], [JURY DELIBERATION], and [VERDICT]. The order of these is established by Precedes relations. In turn, [TRIAL] is a subframe of a larger [CRIMINAL PROCESS] frame.

⁵⁹ Cf. Baker, Fillmore, and Cronin 2003, 286–87; Fillmore, Johnson, and Petruck 2003, 239; Ruppenhofer et al. 2006, §3.2.2, §6.1.

⁶⁰ See Ruppenhofer et al. 2006, §3.2.2 for more on FE relations.

⁶¹ The significance of the Uses relation has changed with each public release of FrameNet (1.1, 1.2, and 1.3). I will not deal with the earlier versions.

Subframes may have FEs that are bound to the FEs of the more complex overarching event.

The *PerspectiveOn* relation is used when there are several possible perspectives on a state of affairs.⁶² In such a case, the FrameNet policy is to use one frame for each perspective, and to relate each perspectivised frame to a non-perspectivised background frame.⁶³

The *InchoativeOf* and *CausativeOf* relations are used to identify the relationship of stative frames to inchoative/inceptive and causative frames that are conceptually built on them. For example, the Verb *attach* can be used in a stative sense (22a), an inchoative/inceptive sense (22b), and a causative sense (22c)—the latter two being both based on the stative.⁶⁴

- (22) a. The tarp is **attached** to the frame with a rope.
 b. The remoras **attached** to the whale with their jaws.
 c. The magician **attached** Paul to the chair with a rope.

The same three types of senses can be seen in the various forms used for the BH Verb לָבַשׁ: the *pu'al* Participle מְלַבֵּשִׁים means “clothed (with a garment),” the *qal* לִבַּשׁ means “to put on (a garment),” and the *hip'il* הִלְבִּישׁ means “to clothe (a person with a garment).” The Verb אָזַר (“gird”) has a similar set of senses, though in the *nip'al*, *qal*, and *pi'el* (respectively), along with the reflexive *hitpa'el* הִתְאָזַר “to gird oneself (with something).”⁶⁵

⁶² “Perspective-neutral” and “perspectivized” frames are introduced in Chang, Narayanan, and Petruck 2002. In Thomas Schmidt’s “Kicktionary” project (<http://www.kicktionary.de/>), as in some the earlier Frame Semantics literature, a similar concept is represented by relating (linguistic) frames to the more general (conceptual) ‘scenes’ that they express (Schmidt 2009, especially n. 3).

⁶³ Note that this relation pertains primarily to alternative perspectives on the *direction* from which an event or scenario is viewed. There are other kinds of ‘perspective’ which are not relevant to this relation. For example, the FrameNet [SOCIAL INTERACTION EVALUATION] frame pertains to judging the character of an *EVALUÉE* on the basis of their *BEHAVIOUR* towards others. However, the judgment may be expressed either in terms of the *EVALUÉE* or their *BEHAVIOUR* alone: so, compare [*To refuse*] would be *impolite*, and [*You*] were *impolite* to my sister. This constitutes a difference in construal, or perspective on the event. However, this is handled by the use of a FE coreness set, rather than splitting the frame.

⁶⁴ Cf. Ruppenhofer et al. 2006, §6.1.5. For more on inceptive/inchoative senses, see Crystal 2003, 229.

⁶⁵ FrameNet has no way of expressing reflexivity. The best solution, for BH reflexive verbs, is to use FE conflation in the target profile itself; for example, הִתְאָזַר would profile both the *CLOTHE* and *WEARER* FEs. However, FrameNet does not at present pay enough attention to target profiles, as we will see in ch. 6 §2.

Finally (for completeness), the *SeeAlso* relation is used for articulating the differences between closely related frames, without having to repeat the explanation in each of the frames. The differences are stated in one frame's definition, and the other frames in the group point to that frame with a *SeeAlso* relation.

The combination of FEs and several kinds of frame relations is a simple but powerful model for describing the kinds of conceptual associations and structures which are evoked for particular semantic fields, and for mapping out the facets and nuances within the range of a single sense. FEs allow the representation of the internal arrangement of a conceptualised event or state, taken as a *Gestalt* cognitive structure. Frame relations allow the representation of many types of relation between such cognitive structures.

The result is a model of the organisational complexity of the mental lexicon. Umberto Eco, in his philosophical explorations of lexical and encyclopaedic semantics (Eco 1976, 1984), argues for a model of the lexicon which he calls Model Q. Unlike many other models (both ancient and modern), Model Q does not assume that linguistic concepts can be arranged hierarchically in a simple tree (which Eco calls a *Porphyrian tree*), with a genus divided by species, and species by sub-species, and so on. The reality is more complex, since there will invariably be alternative configurations and arrangements of parts of the tree, with no one arrangement *necessarily* (or ontologically) the correct one. A Model Q arrangement, by contrast, is a network, in which any node may potentially be connected to any other node; and the entire structure may grow in complexity, almost without limit. FrameNet is, by virtue of its unlimited network of frame relations (and perhaps by accident), an instantiation of Eco's Model Q.⁶⁶

4.2. *Semantic types*

There are some semantic features of frames, FEs, and LUs which do not easily fit into the hierarchical system of frames described thus far. For example, some LUs in a frame may have a positive connotation, and others negative: compare *praise* and *criticise* in the [JUDGMENT]

⁶⁶ In fact, the same holds for the 'construction,' with its multiple-inheritance taxonomic networks. Construction grammarians claim, in effect, that the complexity of Eco's model applies to all language description. In ch. 11, I will compare the Model Q structure of FrameNet with the *SDBH* project.

frame. Some sets of frames may be associated with a particular technical field, without being related by inheritance or subframe relations. Some FEs may have semantic restrictions, such as requiring fillers of a certain type (animate, human, agentive, etc.).

In FrameNet, these diverse features are all covered with the general notion of “semantic types” (Fillmore, Johnson, and Petruck 2003, 245; Baker, Fillmore, and Cronin 2003, 290). A frame, FE or LU may be associated with one or more semantic types, such as “Positive evaluation,” “Animate,” and so on.

4.3. *Support constructions*

As we saw in §2.2 above, FrameNet focuses primarily on annotating frame-bearing words; and in most clauses, the verb is frame-bearing. In some cases, however, the predication involves a verb-noun combination in which (1) the noun is an event or relational noun, (2) the noun is the main frame-bearing constituent (the PIBU), and (3) the verb is a highly general/schematic word which contributes very little semantic content. In such cases, the noun effectively ‘selects’ the verb. Moreover, the subject of the verb often instantiates a FE in the noun’s frame. In such cases, the verb is labelled a *support verb* (Ruppenhofer et al. 2006, §3.2.6.1, §3.4).⁶⁷ The italicised elements in the following examples are Support Verbs, and the first word in each sentence expresses a FE in the target Noun’s frame:

- (23) a. [She] *gave/delivered* an excellent **lecture** on Cognitive Grammar.
 b. [Joe] *took/went* for a **walk** through the woods.
 c. [You] must at least *make* an **attempt**.

According to FrameNet, in such instances the Verb is the syntactic Head while the Noun is the semantic Head (Ruppenhofer et al. 2006, §3.2). However, by the RCG analysis, the Noun alone is the Head: the Noun is a profile equivalent of the clause,⁶⁸ and is clearly the PIBU.⁶⁹

⁶⁷ In FrameNet, support verbs are simply marked as such (on the Verb layer); they are not assigned a PT or GF.

⁶⁸ For instance, in (23a) both *lecture* and the clause as a whole profile a LECTURING event. Arguably, the main Verb (*give/deliver*) also profiles this event, though at a more schematic level; but this is permitted within the RCG definition of a head.

⁶⁹ According to Cognitive Grammar, the main difference between the Verb *walk* and the Noun *walk* is that the Verb “imposes a processual construal on the profiled event,” while the Noun “portrays it as an abstract region” (Langacker 1987b, 90).

As well as support verbs, FrameNet recognises a support construction involving a preposition followed by a target noun; for example:

(24) [They] had been *in possession* of the territory since 1983.

Although Ruppenhofer et al. (2006, §3.2) deny that support constructions are “true idioms,” they should nonetheless be regarded as idiomatically combining expressions.

5. *FrameNet reports*

The end product of lexicographical description in FrameNet consists of three types of reports: Frame Reports, Lexical Unit Reports, and Annotation Reports. These are illustrated in the figures below, which give a partial representation of the FrameNet 1.3 data for the [APPLY HEAT] frame, and within this, the Verb *cook*.⁷⁰

A Frame Report (fig. 5.4 on page 139) includes the following:

1. A sentence-form definition of the frame itself—that is, a description of the event or state-of-affairs as it is evoked by the relevant LUs, including the main FEs involved and how they relate to one another in the event/state-of-affairs
2. A list of all the FEs participating in the frame, each with a sentence-form definition, their core/non-core status, any extra information specified for the FE (e.g., semantic type), and usually one or more sample sentences
3. All frame-to-frame relations in which this frame participates
4. A list of the LUs which evoke the frame

A Lexical Unit Report (fig. 5.5 on page 140) includes the following:

1. The LU’s owner frame
2. A traditional sentence-form definition for the LU, either devised by the FrameNet lexicographer or taken from the *Concise Oxford Dictionary of the English Language* (Pearsall 1999)
3. A summary table of all the core FEs, stating for each one the total number of times it appeared in the annotated sentences,

⁷⁰ The data has been abridged; for example, only some FEs have been listed, and the sample corpus sentences have been simplified. The FrameNet data release uses colour coding to identify FEs, while I have used a subscript notation. For more detail on Lexical Unit and Annotation Reports, see Fillmore, Petruck, et al. 2003, 326–30.

along with the ways in which it is realised grammatically (i.e., PT/GF combinations, with the number of annotated instances of each combination)

4. A detailed table of all the LU's valence patterns

Finally, an Annotation Report (fig. 5.6 on page 141) for a given LU consists of the following elements:

1. A list of the FEs, and the status of each (i.e., core, peripheral, or extra-thematic)
2. Sentences from the corpus, with constituents that express FEs tagged, and null-instantiated FEs indicated at the end

6. Lexicographic annotation and full-text annotation

We will finish this survey of FrameNet with a topic that may turn out to be very pertinent to BH lexical semantics: the difference between **lexicographic annotation** and **full-text annotation**.⁷¹ Lexicographic annotation is annotation of a range of corpus-extracted sentences, which are selected in order to show the range of valence possibilities of a LU. Full-text annotation is annotation not of isolated sentences, but of a running text, in which “the sentences are chosen for us, so to speak.” The FrameNet collaborators list the following differences between the two types:

1. In lexicographic annotation, there is only one target per sentence,⁷² whereas in full-text annotation, all “contentful” LUs may be separately treated as targets.

2. Full-text annotation forces the inclusion of instances that “do not contribute useful lexicographic information specific to the target.” This may involve valence patterns that are already amply exemplified, complicated sentence structures which do not enhance our understanding of the target, or a use of the target which is “very poor style or borderline ungrammatical.”⁷³ In this last case, however,

⁷¹ All quotations in this section are from Ruppenhofer et al. 2006, §3.1.

⁷² This need not be the case: SALSA II is a lexicographic annotation project in which several frame-evoking words in a sentence may be annotated, with all the annotations visible simultaneously.

⁷³ The avoidance of overly complex or ungrammatical constructions is, presumably, what Hans Boas refers to when he says that the example sentences in FrameNet exemplify “prototypical instances” (Boas 2005b, 455).

[APPLY HEAT]

Definition: A COOK applies heat to FOOD, where the TEMPERATURE SETTING of the heat and DURATION of application may be specified. A HEATING INSTRUMENT, generally indicated by a locative phrase, may also be expressed. Some cooking methods involve the use of a MEDIUM (e.g., milk or water) by which heat is transferred to the FOOD.

Core FEs:

CONTAINER The CONTAINER holds the FOOD to which heat is applied.

Boil the potatoes [in a medium-sized pan]_{CONTAINER}.

Semantic type: Container

COOK The COOK applies heat to the FOOD.

[Drew]_{COOK} **sautéed** the garlic in butter.

FOOD FOOD is the entity to which heat is applied by the COOK.

Suzi usually **steams** [the broccoli]_{FOOD}.

HEATING INSTRUMENT

Identifies the entity that directly supplies heat to the FOOD.

Jim **browned** the roast [in the oven]_{HEAT INSTR.}

Non-Core FEs:

DURATION DURATION is the amount of time heat is applied to the FOOD.

Jim **boiled** the egg [for three minutes]_{DURATION}.

Semantic type: Duration

MANNER Any description of the cooking event which is not covered by more specific FEs, including secondary effects (*quietly*, *loudly*), and general descriptions comparing events (*the same way*).

Saute the onions [gently]_{MANNER}.

MEDIUM The substance through which heat is applied to the FOOD.

Bobby **fried** the potatoes [in oil]_{MEDIUM}.

PURPOSE The PURPOSE for which an intentional act is performed.

John **baked** cookies [to show Patti he was sorry]_{PURPOSE}.

TEMPERATURE SETTING

He **baked** the cookies [at 350 degrees]_{TEMP} for 11 minutes.

Frame Relations:

Inherits From: [ACTIVITY], [INTENTIONALLY AFFECT]

Is Used By: [COOKING CREATION]

Is Causative Of: [ABSORB HEAT]

Lexical Units:

bake.v, blanch.v, boil.v, braise.v, broil.v, brown.v, char.v, coddle.v, cook.v, fry.v, grill.v, microwave.v, parboil.v, poach.v, roast.v, saute.v, scald.v, sear.v, simmer.v, steam.v, steep.v, stew.v, toast.v

Figure 5.4 Frame Report for [APPLY HEAT]

cook.v
Frame: [APPLY HEAT]
Definition: to prepare food by applying heat

Core Frame Elements and Their Syntactic Realisations:

Frame Element	No. Annotated	Realisation(s)
CONTAINER	1	PP[in].Dep (1)
COOK	24	CNI.-- (19) NP.Ext (4) PP[by].Dep (1)
FOOD	24	NP.Obj (20) CNI.-- (2) NP.Ext (2)
HEATING INSTRUMENT	23	INI.-- (21) PP[in].Dep (1) PP[on].Dep (1)

Valence Patterns:

No. Annotated	Patterns		
1 TOTAL (1)	CONTAINER PP[in] Dep	COOK CNI --	FOOD NP Obj
23 TOTAL (2)	COOK CNI --	FOOD CNI --	HEATING INSTRUMENT INI --
(1)	CNI --	NP ext	INI --
(15)	CNI --	NP Obj	INI --
(2)	NP Ext	NP Obj	INI --
(1)	NP Ext	NP Obj	PP[in] Dep
(1)	NP Ext	NP Obj	PP[on] Dep
(1)	PP[by] Dep	NP Ext	INI --

Figure 5.5 Lexical Unit Report for [APPLY HEAT].cook.v

cook.v	
Frame Elements	Core Type
CONTAINER	Core
COOK	Core
DURATION	Peripheral
FOOD	Core
HEATING INSTRUMENT	Core
MANNER	Peripheral
MEDIUM	Peripheral
PURPOSE	Extra-Thematic
TEMPERATURE SETTING	Peripheral

- rcoll-food
 1. She told us that there was a hut where [the patients]_{COOK} lit a fire and **cooked** [their food]_{FOOD}. INI_{HEAT INSTR}
 2. They prayed before [they]_{COOK} **cooked** [their food]_{FOOD}. INI_{HEAT INSTR}
- rcoll-pasta
 1. **Cook** [the pasta]_{FOOD} [until al dente]_{DURATION} ; drain. CNI_{COOK} INI_{HEAT INSTR}
 2. **Cook** [pasta]_{FOOD} [in boiling water]_{MEDIUM} [for 10–12 minutes until bite tender]_{DURATION}. CNI_{COOK} INI_{HEAT INSTR}
- np-pp[for]
 1. Heat oil in non-stick frying pan and **cook** [sandwich]_{FOOD} [for 3 mins]_{DURATION}. CNI_{COOK} INI_{HEAT INSTR}
 2. **Cook** [the duck]_{FOOD} [for a further 1¼-1½ hours until the juices run pale yellow when flesh is pierced]_{DURATION}. CNI_{COOK} INI_{HEAT INSTR}
- np-pp[in]
 1. **Cook** [the minced beef]_{FOOD} [in a saucepan]_{CONTAINER} [over a high heat]_{TEMP} [until browned]_{DURATION}. CNI_{COOK}
 2. Meanwhile, **cook** [the new potatoes]_{FOOD} [in boiling water]_{MEDIUM} [until tender]_{DURATION}. CNI_{COOK} INI_{HEAT INSTR}
 3. [I]_{COOK} prefer to **cook** [it]_{FOOD} [in the microwave]_{HEAT INSTR}, then coat it with the black butter.
- trans-simple
 1. **Cook** [the onion, garlic and tomatoes]_{FOOD} [in the water]_{MEDIUM} [for 10 minutes]_{DURATION}. CNI_{COOK} INI_{HEAT INSTR}

(etc.)

Figure 5.6 Annotation Report for [APPLY HEAT].cook.v

we might object that supposed “poor” style and “borderline” grammar is *very* interesting and relevant to language understanding, and the dynamic flexibility of the semantics-syntax interface.

3. Lexicographic annotation aims to represent all the valence patterns for a given LU, whereas a given text will not usually contain instances of every pattern.

4. Lexicographic annotation does not yield data about the relative frequencies of the LUs in the database, whereas full-text annotation will at least show the relative frequencies of the LUs in a given text. I would add that full-text annotation will also show the relative frequencies, in a given text, of the various *valence patterns* for a particular LU. This information may be valuable in estimating the prototypicality, and possibly the relative levels of psychological entrenchment, of the various constructions used for a LU.

While the focus in FrameNet has been mostly on lexicographical annotation, they have begun some full-text annotation; but in my view SALSA II is a more ambitious and potentially innovative full-text annotation project.⁷⁴

A large-scale BH frame semantic annotation project may well aim for a compromise between the two approaches. For most frame-evoking words, it would be advisable to annotate all instances in the text, with the possible exception of only the most frequent words. Indeed, with infrequent words, lexicographic annotation (in the style of FrameNet) is impossible for BH, since the available corpus is far too small to hope that all the valence patterns will be exemplified.

⁷⁴ The FrameNet full-text annotation project can be viewed online (<http://framenet.icsi.berkeley.edu/>), but the data is currently not available for public licensing or downloading.

PART TWO

CRITIQUING AND ENHANCING FRAMENET

CHAPTER SIX

RE-FRAMING THE THEORY: SEMANTICS

While I find FrameNet to be a very useful tool for lexical semantic analysis, there are a number of areas in which it may be critiqued and improved, or in which a more nuanced position is needed.¹

1. *Categorising frame elements*

One such area is in the idea of frame elements. I wish to focus on FrameNet's three-way division into core, peripheral, and extra-thematic FEs. In particular, the distinction between core and non-core FEs needs a more carefully nuanced presentation.

1.1. *Core and peripheral FEs*

In the Frame Semantics literature, there is some confusion over what constitutes a core FE. The identifying aspect has been described in various ways, such as conceptual necessity (Ruppenhofer et al. 2006, §3.2.1) and centrality to the meaning of a LU (Atkins, Fillmore, and Johnson 2003, 267–68). However, there is ambiguity and imprecision in the way these ideas are fleshed out.

Sometimes the key criterion for core status seems to be whether the FE is frame-specific (such as BUYER, SELLER, etc.) or general (such as TIME, PLACE, MANNER, etc.). Ruppenhofer et al. (2006, §3.2.1) state that peripheral (as opposed to core) FEs “can be instantiated in any semantically appropriate frame.” Similarly, Baldewein et al. (2004, §5) define peripheral FEs as “frame-independent adjuncts.” By implication, core FEs are frame-dependent, or frame-specific.

A different criterion is whether the event, entity, or state of affairs (SOA) in question necessarily involves the FE. Thus, in identifying the core FEs for the frame evoked by *arrest*, Atkins, Fillmore, and Johnson note that “an act of arresting involves an arresting officer, a suspect, and some offense or charge,” and conclude that these three

¹ Lest the reader's hopes be raised too far, note that my application in Part Three adopts some of the recommendations from these two chapters, but not all.

FEs are core—since “if any of these is missing, a *true act of arresting* someone has not taken place” (Atkins, Fillmore, and Johnson 2003, 268, emphasis added).²

On the other hand, the FrameNet data itself contains examples of non-core FEs that are both frame-specific and integral to the event/entity/SOA in question. A buying event necessarily includes a BUYER, GOODS, SELLER and COST, all of which are frame-specific; yet it is well documented that only the first two of these are core FEs, since the latter two are conceptually less salient, and very often backgrounded, in the [COMMERCE BUY] frame (cf. Chang, Narayanan, and Petruck 2002). Frame-specific peripheral FEs are also implied by Atkins, Fillmore, and Johnson (2003, 268), despite the statements cited above.

Moreover, asking which roles are necessary to the event/entity/SOA itself opens the door to a whole range of general FEs which nobody would consider core. A buying event, as with most events, necessarily occurs at a particular time and place. Does this make TIME and PLACE core FEs?

The key issue in this confusion, I suggest, is whether the focus is placed on the nature of the event/entity/SOA itself, as understood when it is analysed logically, or on the *construal* of the event/entity/SOA in a typical context (i.e., using a default construal of the frame-evoking LU). The confusion between explanations is largely due to a lack of precision on this issue. In a *semantic* frame analysis, the focus should always be on construal, and whether a FE is normally evoked.

The point may be illustrated with the following example:

A core frame element is one that instantiates a conceptually necessary component of a frame, while making the frame unique and different from other frames. For example, in the Revenge frame, Avenger, Punishment, Offender, Injury, and Injured_party are all core frame elements, because an avenging event necessarily includes these participants. One cannot imagine an act of revenge that is not preceded by a (perceived) offense or one that is not directed against anybody. (Ruppenhofer et al. 2006, §3.2.1)

This example is extraordinary in light of the FrameNet data.³ The [REVENGE] frame contains these five core FEs; and yet in the 29 sen-

² Similarly, Ruppenhofer et al. 2006, §3.2.1.

³ This data is admittedly provisional. Nevertheless, the [REVENGE] data as described here seems to correlate fairly well with the semantics of the terms involved.

tences annotated for the Noun *revenge* itself, the INJURED PARTY FE is never marked—not even by NI! It is similarly absent for the Verb *get even* (10 sentences), the Nouns *retaliation* (26 sentences) and *retribution* (12 sentences), and the Adjective *vengeful* (9 sentences); and it appears only once for the Verb *retaliate* (35 sentences) and twice for the Noun *vengeance* (26 sentences).⁴ It does, however, occur in every sentence annotated for the Verb *revenge* (8 sentences), and in around 40% of the sentences for the Verb *avenge* (13 of 32 sentences).⁵

These figures are in stark contrast with those for the AVENGER and OFFENDER FEs, both of which occur in the vast majority of sentences annotated across all the frame's LUs. Table 6.1 shows how the three FEs compare.

Table 6.1 Instantiation statistics for three FEs in the [REVENGE] frame

LU in [REVENGE]	Sentences annotated	No. with AVENGER	No. with OFFENDER	No. with INJURED PARTY
<i>avenge</i> (v)	32	32 (100%)	32 (100%)	13 (41%)
<i>get even</i> (v)	10	10 (100%)	10 (100%)	0 (0%)
<i>retaliate</i> (v)	35	35 (100%)	35 (100%)	1 (3%)
<i>retaliation</i> (n)	26	18 (69%)	25 (96%)	0 (0%)
<i>retribution</i> (n)	12	7 (58%)	12 (100%)	0 (0%)
<i>revenge</i> (n)	29	24 (83%)	28 (97%)	0 (0%)
<i>revenge</i> (v)	8	8 (100%)	8 (100%)	8 (100%)
<i>vengeance</i> (n)	26	20 (77%)	26 (100%)	2 (7%)
<i>vengeful</i> (a)	9	9 (100%)	9 (100%)	0 (0%)

How do we account for the discrepancy between these figures and the definition by Ruppenhofer et al.? The key lies in their rather ambigu-

⁴ Collin Baker (personal communication) has informed me that the FrameNet collaborators are striving to eliminate such anomalies in the data, by ensuring that non-instantiated core FEs are *always* annotated as NI. However, it must be asked whether the initial, intuitive annotation of the [REVENGE] frame does not, in fact, reflect the underlying conceptualisations—in which case adding many more extra NI tags would merely obscure a problem with the theory.

⁵ The figures are derived from the Lexical Entry Report pages in the FrameNet Release 1.3 data, rather than the Annotation Report pages. There are only minor differences between the two parts of the FrameNet data.

ous phrase “conceptually necessary.” Is a conceptually necessary FE one that is (logically) necessary to *the event or entity* when subjected to analysis, or rather one that is necessarily conceptualised in the *construal* of an event? The difference is crucial. According to Ruppenhofer et al., “one cannot imagine an act of revenge” that does not have their five core participants—and in one sense they are right, at least in the context of their discussion of the nature of such an event. However, the FrameNet data shows that one can certainly construe (i.e., imagine) an act of revenge without including all five FEs, depending on (i) the LU used to evoke the frame, and (ii) the context in which it is used.

Indeed, as Croft and Cruse emphasise, construal of frames is remarkably flexible and dynamic. The annotation data would suggest that very few FEs are, in fact, *necessary* to the conceptualisation of a frame. Some are only rarely absent from the construal of a LU, since they feature strongly in its default construal; but few are not able to be overridden by contextual constraints.

In other words, the obligatory-optional distinction represents a *graded scale*, rather than a binary property.⁶ Some FEs are more immediately and naturally evoked by a LU than others. Some, while not always evoked, are nevertheless often hovering just beneath the surface (so to speak).

This can be illustrated once more with [COMMERCE BUY].*buy*. The BUYER and GOODS FEs are obligatory, since they are difficult to omit, both syntactically and conceptually. SELLER appears relatively easy to omit. However, it is more difficult to decide whether COST is conceptually optional, or whether in fact COST (or a cost-related FEs, such as MONEY, RATE or MEANS) is integral to our conceptualization of *buy*, but fairly frequently left unspecified (through NI). Either way, when the corpus examples for *buy* are examined, the COST seems (in my mind) implied, or just near the surface, more frequently than is the case for the SELLER; and so COST seems *less* optional than SELLER.

However, even the BUYER can be omitted—as is evident in the following example:

⁶ This understanding of the core-peripheral distinction resembles the relative, graded view of the argument-adjunct distinction put forward by both Langacker and Croft, which we saw in chapter 4. Indeed, the similarity is no coincidence, if indeed the conceptual/semantic pole of a word influences its grammatical requirements.

- (1) [Money] may be able to **buy** flying time, but it can not buy skill . . .
(FrameNet 1.3 data, *buy.v*)

Here the (human) BUYER is absent from the construal.⁷ This is achieved by the well-known phenomenon of instrument-subject alternation (Levin 1993, 80), in which an intermediate participant in the causal or force-dynamic structure of an event (in this case, the MEANS) is promoted to subject status (Croft 1991, 1998). The result is that the core BUYER FE is pushed out of the picture.

What, then, should be the criterion (or criteria) which determines core status—or rather, which determines the degree of coreness? From a semantic viewpoint, it should be the degree to which a FE is salient or necessary in the construal process. A FE is strongly core if it is strongly evoked or foregrounded in the default construal of a frame—or, equally, if it is difficult for the FE to be backgrounded. A FE is non-core (peripheral) if it is normally not evoked, or may be easily backgrounded. Some FEs will clearly be core, and some will clearly be peripheral; and in between lie varying degrees of coreness.⁸

1.2. Core-peripheral variation between LUs in a frame

Another possible complexity is that core status for a FE could vary between LUs in the same frame. This seems intuitively likely, since different LUs in a frame will focus more or less on different aspects of that frame. It would also be consistent with the present FrameNet data, since LUs in the same frame seem to differ in the ease with which various FEs are able to be backgrounded. With most of the LUs in the [REVENGE] frame, the INJURED PARTY FE seems to be consistently backgrounded; but with *avenge (v)* and *revenge (v)*, it is backgrounded far less often. Thus, while specifying coreness at the frame level may be a good starting point, it may be helpful to allow variation of core status at the LU level.

Allowing core-peripheral status to vary would cater for two specific phenomena which FrameNet does not handle particularly well at present: verbs that specify manner, and frame-bearing nouns.

The first case is illustrated by the [SELF MOTION] frame, whose core FEs include SELF MOVER and GOAL. MANNER is listed as peripheral.

⁷ In the current release of the data, the BUYER is marked as omitted by CNL; but it is difficult to see how this is a 'constructional' omission (in the FrameNet sense).

⁸ This issue has been clarified somewhat in Fillmore and Baker 2010, 325.

The frame does contain a few verbs which are not manner-specific, such as *head*, *proceed* and *venture*; however, the vast majority of verbs—over 100, in fact—incorporate a manner directly into their profile: *amble*, *barge*, *bolt*, *bound*, *burrow*, *bustle*, *canter*, *clamber*, and so on. For these LUs, the MANNER should be core, and consistently linked to the target. This does not preclude such verbs being used with additional manner specifiers, as in *They jogged [slowly] down the hill*. Multiple manner indicators are common-place; in this case, one happens to be built in to the core profile of the LU itself.

Similarly, [COMMUNICATION MANNER], which contains words that “describe Manners of communication” (*babble*, *chatter*, *mumble*, etc.), has a MANNER FE; and once again, the MANNER is peripheral, and is never incorporated into the LUs.

In fact, although it is almost undocumented, FrameNet has the ability to specify any FEs that a given LU “incorporates” in its profile.⁹ For instance, [OFFENSES] has three core FEs: OFFENSE, PERPETRATOR, and VICTIM; and a number of the LUs incorporate OFFENSE—for instance, the Nouns *arson*, *hijacking*, and *robbery*, but not the more general *felony*. There are even a few instances in which a MANNER FE is incorporated into a LU, namely, with [CONDUCT].*misbehavior.n*, [CONDUCT].*act_up.v*, and [ENCODING].*misword.v*. However, this feature is used inconsistently and, as far as I can tell, only with FEs that have core status in the frame itself.

Secondly, LU-specific coreness ratings would also better handle frame-bearing event nouns, such as *accusation*, *call*, and *termination* (in the frames [JUDGMENT COMMUNICATION], [CONTACTING] and [FIRING], respectively). The FrameNet data for these nouns, compared with the verbs *accuse*, *call*, and *terminate*, shows that the noun

⁹ The notion “Incorporated FE” was briefly mentioned in the ReadMe.html file for FrameNet Release 1.1, and appears without explanation in the XMLDocumentation file in this and subsequent releases. As yet, it has not been explained in the PDF documentation (Ruppenhofer et al. 2006). A brief description of Incorporated FEs is provided on the website for the Spanish FrameNet project: “We sometimes find FEs which are typically expressed as separate constituents in the valence patterns of one lexeme, but are typically incorporated in other lexemes in the same frame. For example, in the Shoot projectiles frame, the Firearm is a separate constituent in *Les dispararon con una ametralladora* (They shot at them with a machine gun), but incorporated in *Les ametrallaron* (They machinegunned them).” (Spanish FrameNet, “Frame Elements,” Autonomous Univ. of Barcelona, <http://gemini.uab.es:9080/SFNsite/frame-elements>)

LUs leave supposedly core FEs unexpressed far more regularly than their verbal counterparts.

The FrameNet collaborators acknowledge this, and concede that event nouns are something of a difficulty. “In the case of noun targets, null instantiation is very common, and it is much more difficult to decide what licenses the absence of the noun’s conceptually necessary arguments” (Ruppenhofer et al. 2006, §3.4.3). In many cases (mostly generic, habitual, and quantified uses), core FEs are omitted, but neither DNI nor INI seems applicable; and the FrameNet policy is to leave them entirely unmarked.¹⁰ This does not sit well with their overall theory. Is there a better explanation for the behaviour of frame-bearing nouns?

The real issue with event nouns is not, for instance, that they are often used generically—indeed, the primary example used by Ruppenhofer et al. for the noun *conviction* pertains to a specific event (“that conviction”). The issue is rather that many event nouns differ from their verbal counterparts *precisely in their narrower focus within the frame*. Verbs, by their nature as *n*-place predicates, tend to focus both on the event itself (the referential argument) and on one or more participants in the event, about which it predicates (the traditional arguments). Again, this is why the major syntactic positions are strong indicators of coreness. In contrast, many event nouns are much more easily able to focus on the event alone, in abstraction, and thus may be perfectly amenable to use without any specification of other FEs in the frame. This explains their frequent generic use, but equally applies to their use with specific events.

Thus, leaving these FEs unmarked *is*, in many cases, the most appropriate approach, precisely because of fundamental differences between verbs and their nominal equivalents—differences which are surely significant for lexicographical description. FEs which are clearly core for a verb may well be *less* core for its corresponding noun.

In summary, while the identification of core and peripheral FEs is helpful, it is important to understand the relative, graded nature of this distinction. FEs are more or less core, depending on their salience in a default construal of a LU; and while the overall pattern of core

¹⁰ This is not consistently applied in the actual annotation data in FrameNet Release 1.3; but the inconsistencies will presumably be resolved in future releases.

and peripheral FEs will be relatively stable across the LUs in a given frame, we must be able to accommodate variations.

2. Target annotation and concept profiles

The issue of incorporated FEs leads to another problematic area in FrameNet: the tagging of annotation targets with FEs. Currently, the target is usually simply marked as such, with no PT, GF or FE assigned. However, there is some inconsistency in this. For the artifact Nouns in [CLOTHING] (*shirt, skirt, sock, vest*, etc.), the target is always tagged with the FE GARMENT—which is the only core FE in the frame.

A more serious inconsistency, however, appears with some *relational* nouns and verbs, which are sometimes, but not always, assigned a FE tag even when they are a governing target. This is the case with *violate* and *violation* in [COMPLIANCE]. One of the core FEs in this frame identifies the ACT that “is judged to be in or out of compliance with the Norms,” but the tagging of the ACT is inconsistent. Where the violation event is described or specified independently of the target, this description is tagged as the ACT:

- (2) a. A lot of people suspect that [blocking savers’ access to their money (ACT)] **violates** the new constitution’s explicit ban on compulsory loans to the government.
- b. A UN arbitration panel ruled on May 8 that France had committed “substantial **violations**” of a 1986 UN accord [by repatriating two French agents convicted in New Zealand of sabotage and manslaughter (ACT)].

However, where the violation event is not described or specified, the target itself is sometimes, but not always, tagged as the ACT:

- (3) a. This is not because the law does [**violate** (ACT)] human rights.
- b. He is still guilty because he has [**violated** (ACT)] God’s law.
- c. Thus the Sabbath laws had not been **violated** and work was completed on time.

Very often for the verb, and occasionally for the noun, the ACT FE is simply not instantiated.

I suggest that these inconsistencies in target annotation stem from a lack of attention given to concept profiles in FrameNet.¹¹ As both

¹¹ Cf. fig. 3.1 on p. 52.

Langacker and Croft maintain (Langacker 1987a, 183; Croft and Cruse 2004, 15), an adequate description of the meaning of a LU must include both its concept profile and its underlying frame. Consequently, just as we need to consider what FEs may be incorporated in the concept profile of the LU, so also tagging the FEs expressed by the target itself should always be part of the analytical process. Of course, for the most part these tagged FEs will simply be the LU's incorporated FEs.

For verbs, this approach would be more consistent with the recognition that verbs predicate not only about their arguments, but also about a referential argument for the event itself. Thus, in [COMPLIANCE], an extra FE would be required: as well as the ACT that is judged to be in or out of compliance with the norms, the COMPLIANCE FE would express the state or event of COMPLIANCE (or non-compliance) itself.

Systematically identifying the target's FEs will also help in identifying the semantic differences between near-synonyms in a given frame. For example, as discussed above (page 150), the Verbs *proceed* and *walk* differ (at least) in the fact that the manner of self-movement is inherent in the latter. Thus, the phrase *proceed on foot* expresses the self-movement ACT in the (target) Verb, and the non-core MANNER in a Prepositional Phrase. On the other hand, *walk* expresses both the ACT and the MANNER, both being part of the LU's concept profile.¹² We will see in chapter 10 that some of the extended senses of תָּקַר involve a similar kind of FE conflation.¹³

3. Null instantiation, utterances, and context

One important feature of FrameNet annotation is the identification of null instantiation (NI)—particularly INI and DNI, which are consid-

¹² In fact, such a phenomenon is mentioned in the description of [BODY MOVEMENT] in FrameNet 1.3 (containing such verbs as *arch*, *blink*, *clap*, *fidget*, *nod*, etc.), whose two core FEs are AGENT and BODY PART. The description of BODY PART has the following comment: "With some verbs in this frame, the Body_part involved in the action is specified by the meaning of the verb and cannot be expressed separately"—for example, *Pat yawned*, but not **Pat yawned his mouth*. Despite this acknowledgement, the annotations for *yawn* do not include the BODY PART FE; thus, in the valence patterns for *yawn*, only the AGENT is listed.

¹³ See in particular ch. 10 §§7.6–7.7.

ered lexicographically significant. Thus, if a core FE is not expressed by a sentence constituent, and there is no constructional reason for its omission (which would be CNI), it should be marked either as DNI (identifiable by the context) or INI (left completely unspecified).

However, one potential flaw in FrameNet's implementation of NI is the fact that sentences are analysed in isolation from their context. Indeed, to ignore context is one of their stated guidelines: "We do not annotate constituents that are understood *only through context* as referring to the filler of a particular frame element role" (Ruppenhofer et al. 2006, §3.1, emphasis added). Instead, the annotator marks the FE as omitted by either INI or DNI—a decision again based on the sentence in isolation.

Given that example sentences in FrameNet are extracted from actual discourses, this interpretation of sentences apart from their contexts is hard to justify. It has long been recognised that meaning is partly determined by context. Therefore, removing a sentence from its context, and assigning it a context-independent interpretation, will often yield a different interpretation or meaning from the context-dependent one. In Lyons' terminology, the FrameNet approach amounts to treating a context-dependent *utterance* as if it is a context-independent *sentence* (Lyons 1995, 35–40, 131, 259–61). Lyons lists a number of aspects of utterance-meaning which are determined by context; and crucially, one of these is *what is implied or presupposed* (Lyons 1995, 266). This is precisely what the NI classification should set out to indicate.

Indeed, an utterance *can* potentially be removed from its context, and expressed as an independent sentence—but it may require modification to retain its original meaning. That is, when determining the meaning of an *utterance*, context will make clear *what sentence* has been uttered (Lyons 1995, 265).¹⁴ This will be illustrated shortly.

The FrameNet policy poses significant problems when it comes to NI—problems which could potentially result in lexicographical inaccuracy, if INI and DNI are indeed lexicographically significant. Indeed, in the case of frame-bearing nouns, the collaborators admit that

¹⁴ Lyons discusses two other aspects of utterance-meaning which are determined by context: what proposition (if any) has been expressed, and with what illocutionary force it has been expressed.

confident decisions on NI are all but impossible without taking context into consideration (Ruppenhofer et al. 2006, §3.4.3).

In stark contrast is the related German-language project SALSA II,¹⁵ which allows dynamic expansion of the relevant context.

Often the meaning of a sentence only becomes clear when the context is considered. In the SALSA tool, arbitrarily many sentences of context (preceding as well as succeeding) are shown on demand. Context can not only be viewed, it may also contain frame elements, which can be tagged with the tool. This happens e.g., in COMMUNICATION frames, where MESSAGE frame elements often span more than one sentence. (Erk, Kowalski, and Padó 2003, §6)

Specifically, there are two problems which can emerge when decisions about NI are made without reference to context.

3.1. DNI or INI

Where a core FE is not expressed in a sentence, context can be crucial in deciding between DNI and INI. For example, Atkins, Fillmore, and Johnson (2003, 269) discuss the following sentence with reference to the verb *argue* in the [QUARREL] frame:

- (4) Mr. and Mrs. Popple would **argue** all day.

In this sentence, they tag the core FE TOPIC as INI—since (they claim) “there is no sense that the TOPIC must be inferred from the surrounding discourse for this sentence to be comprehensible” (269). This may be relevant if what matters is a default, context-less interpretation. However, with a corpus of sentences extracted from real discourses, what matters is interpretation-in-context. Whether the speaker *intends* the TOPIC to be inferred can only be assessed from the surrounding discourse.

Indeed, it is easy in this case to construct a context in which the omission is clearly by DNI; for example:

- (5) The Popple family could never decide what to watch on television. Mr. and Mrs. Popple would **argue** all day.

Using Lyons’ terms again, the string of tokens *Mr. and Mrs. Popple would argue all day*, in this particular context, is the utterance of the sentence “Mr. and Mrs. Popple would argue all day about what to

¹⁵ See n. 2 on p. 107.

watch on television” (cf. Lyons 1995, 246–47, 65–69). In a different context, the same string may be the utterance of a different sentence, such as “Mr. and Mrs. Popple would argue all day about their cat,” or simply “Mr. and Mrs. Popple would argue all day.” Only in the last case is the topic omitted by INI; in the others, the omission is by DNI.

3.2. *Null instantiation (or not)*

Even before questions about DNI versus INI, determining whether a FE is instantiated at all in a sentence can be dependent on the context. Ruppenhofer et al. (2006, §3.1) cite the following example, with the target verb *retaliate* in [REVENGE]:

- (6) Smith was surprised when Lowry **retaliated** for the attack.

They then consider whether the OFFENDER or the INJURED PARTY FEs are contained in the sentence. They claim that “the surface syntax does not contain constituents” representing these FEs, and continue:

One plausible understanding of the sentence as a whole is that Smith was the one against whom Lowry retaliated. One might, thus, want to tag *Smith* as the Offender. However, there is an alternative interpretation: Smith could just be an observer of a conflict involving Lowry and a third party. In such cases, where there is no syntactic construction present that guarantees that interpretation, we do not annotate the non-local phrases in question. In the particular example here, we mark the Offender as omitted under definite null instantiation (DNI). (Ruppenhofer et al. 2006, §3.1)

Their implication is that the same goes for the INJURED PARTY: it *could* be Lowry, but this interpretation is not guaranteed by the surface syntax, and so the INJURED PARTY would be tagged as INI.

This is faulty reasoning. What matters, in a real (i.e., contextual) utterance, is not which of several interpretations is “guaranteed” by the localised sentence syntax, but rather which interpretation is validated by the whole range of constraints—including contextual constraints (§3.1). Once again, it is easy to construct a context in which there is no doubt:

- (7) Smith, thinking Lowry would be soft prey, set upon him with lump of wood. Smith was surprised when Lowry **retaliated** for the attack.

At this point, contrary to the preceding quote, there is no reasonable alternative in interpretation. Smith *cannot* “just be an observer of a conflict involving Lowry and a third party,” nor is there any doubt

that Lowry is the INJURED PARTY. Thus, in this context both OFFENDER and INJURED PARTY are instantiated in utterance (6).

4. *Frame inheritance and the categorisation triangle*

The system of frame-to-frame relations in FrameNet is a powerful and extensible way of representing the complexity of the conceptual networks/matrices that underlie language, and lexemes in particular. However, frame relations have greater potential for linguistic description than is currently realised in FrameNet.

We saw in chapter 3 that according to both Langacker and Croft, most frames are profiled against other frames, which contain the presupposed background information for the profiled frame; and that moving back through the frame network, we will eventually reach 'basic' frames, which represent directly embodied human experience. At first glance, the frame-to-frame Inheritance relations in FrameNet seem to express this notion—and indeed, sometimes they do, to a limited extent, as with the [PERCEPTION] frame and its descendants.¹⁶

However, FrameNet's Inheritance relation often operates with a different sort of frame relation, in which frames are ultimately derived from completely *abstract and schematic* frames, which are not associated with any particular sort of bodily experience, and which are not themselves inherited from any other frame. Such abstract and schematic frames include [ENTITY], [STATE], [EVENT], and [PROCESS] (the first two of which are "non-lexical" frames). Thus, there seem to be two very different notions of basic or underived frames.

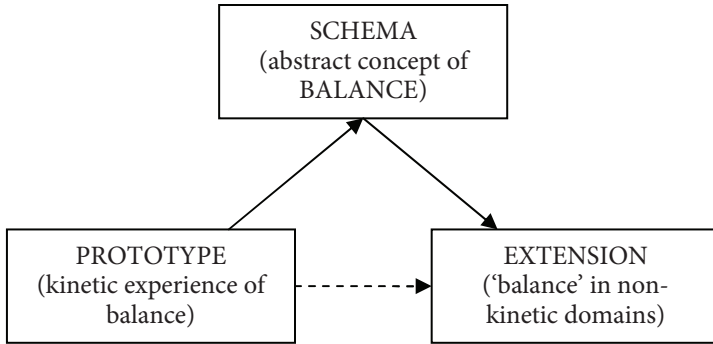
Can these two types of inheritance be reconciled with one another? They can—in fact, they fit very well with the **categorisation triangle** (Taylor 2002, 522).¹⁷ The categorisation triangle expresses the distinction between the *experiential basis/prototype* for a metaphorical extension and the *image schema* which may be abstracted from both.¹⁸

¹⁶ I use 'descendants' in a broad sense here, to include the network coming from [PERCEPTION] via both Is-Inherited-By and Is-Used-By relations. Including both relation types incorporates non-physical frames (such as [SCRUTINY]) into the network.

¹⁷ Though I am using Taylor's description and example, the concept comes from Langacker's analysis of complex categories (Langacker 1987a, 369–77); note especially Langacker's fig. 10.1 on p. 373, which defines the categorisation triangle.

¹⁸ Cf. Clausner and Croft 1999, 14: "Image schemas structure our bodily experience . . . , and they structure our nonbodily experience as well, via metaphor This

Taylor's representation of the categorisation triangle with respect to the various senses of *balance* is reproduced in figure 6.1.



Note: The kinetic experience of balance is extended to other domains, entailing the abstraction of a schematic notion that can be applied to non-kinetic domains.

Figure 6.1 The categorisation triangle for *BALANCE*. Reproduced by permission of Oxford University Press from Taylor 2002, 522, fig. 26.1.

Taylor explains:

The prototype constitutes the ‘input’ into the triangle. In the case of balance, the prototype is the direct physical experience of maintaining an upright posture, as when walking, riding a bicycle, standing on one leg, standing upright while carrying a heavy weight in one hand, staying upright in a gusty wind, and so on. The similarities between these experiences allow the formation of a schematic representation, that unifies the different experiences as instances of the same concept. Then, as the notion of balance is extended (metaphorically) to non-physical domains, there simultaneously emerges an even more schematic representation, which in turn allows the concept to be applied to an ever greater variety of different domains. Assuming that the experiential source of the *BALANCE* schema remains salient, we can retain the status of image schemas as both schematic (i.e., domain independent) and experiential (based in bodily experience) concepts. (Taylor 2002, 522–23)

definition clarifies the seemingly contradictory description of image schemas sometimes found: image schemas are ‘abstract’ in one sense of that word—they are schematic—but not ‘abstract’ in another sense of that word—they are embodied.”

How would this translate to the FrameNet relations? Consider an expression like *balanced opinion*. In a frame-semantic analysis of this sense of *balanced*, there are three pertinent frames: (i) the frame evoked by the metaphorical use itself; in fact, it fits quite well into FrameNet's [PARTIALITY] frame, which contains adjectives like *biased* and *impartial*; (ii) a [BALANCE PHYSICAL] frame, which functions as the source frame for the metaphorical mapping on which the expression *balanced opinion* rests; and (iii) a schematic non-lexical frame which we might call [BALANCE SCHEMA], to which both [PARTIALITY] (or at least the *balanced LU* in the [PARTIALITY] frame) and [BALANCE PHYSICAL] are related.

At this stage, FrameNet focuses on frame-to-frame relations of the schema-instance kind, rather than the metaphor source-target kind.¹⁹ However, both could be incorporated into a lexicographical model. I have done so by distinguishing between 'Inheritance' and 'Extension.' Inheritance pertains to a frame which is an instance of a more schematic (possibly non-lexical) frame, whereas Extension pertains to a frame which is extended in a metaphoric/metonymic way from a (non-schematic) source frame. We will explore these relations with a more complex example in the following section.

5. *Metaphor and dynamic construal*

In chapter 3 (§6.4), I argued that a cognitively-based lexicon should ideally include information about conventionalised metaphors. At present, FrameNet pays little attention to metaphor as such—a somewhat surprising lack, since FrameNet's extensible system of frame relationships could be fairly easily augmented for this purpose. I have incorporated information about metaphors not only by means of a new Extension frame-to-frame relation, but also by allowing for *LU-to-frame* relations. This system does not capture the kind of detail found in Blending Theory analyses in the literature, but it does allow broad mapping structures to be identified.

I will illustrate how this might work with the earlier example of A THEORY IS A BUILDING, repeated here:²⁰

¹⁹ Indeed, FrameNet's Inheritance relation is described in terms like "schema" and "instance."

²⁰ Ch. 3 §6.3.

- (8) His theory is shaky and rests on weak foundations. Unless he can shore it up, the critics will demolish it.

Two frames from FrameNet are immediately relevant to this metaphor: [REASONING], which contains LUs for abstract words like *argue*, *argument*, *demonstrate*, *disprove*, *prove*, *reason*, and (though not yet listed in FrameNet) *theory*, and [BUILDINGS], which contains a long list of artifact Nouns denoting fixed structures. Assuming that the extended (metaphoric) sense of *theory* in (8) is relatively entrenched, the source frame is [BUILDINGS] and the target is [REASONING]; but the actual frame evoked by *theory* is a blended frame, which I will call [REASONING AS A BUILDING]. There is an asymmetry in the relation of the blended frame [REASONING AS A BUILDING] with the source and target frames: while [REASONING AS A BUILDING] *inherits* fully from [REASONING], the connection with [BUILDINGS] is by an image, for which I use the Extends relation. The initial structure is shown in figure 6.2, with frames shown in rectangles and LUs in ovals, and thick black lines from LUs to their owner frames. The Inherits and Extends relations are shown by solid and dashed lines, respectively.

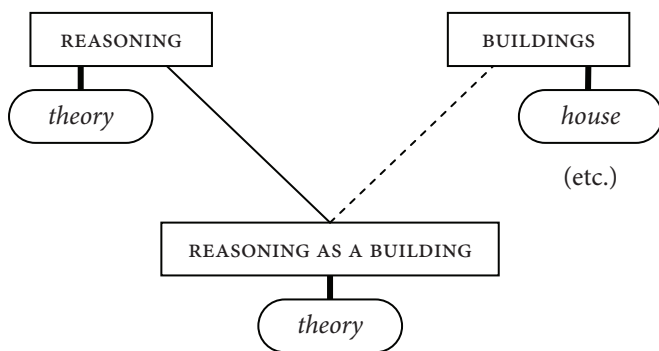


Figure 6.2 A THEORY IS A BUILDING: initial frames

The Verb *demolish* demonstrates how a word might participate in the blend from the other direction: whereas the more basic sense of *theory* is in the target frame, *demolish* is related to the physical source frame of buildings. In fact, *demolish* is rather complex, in that it is not a member of [BUILDINGS], but evokes it indirectly. In FrameNet 1.3, *demolish* belongs (in its default construal) in the [DESTROYING] frame, along with Verbs like *annihilate*, *dismantle*, and *obliterate* (as

well as cognate Nouns). The link to [BUILDINGS] comes in the fact that *demolish* is characteristically used with buildings—unlike *annihilate*, for example. I represent this with an Evokes relation from the LU [DESTROYING].*demolish* to [BUILDINGS].

Finally, the sense of *demolish* in (8) properly belongs in [REASONING AS A BUILDING], as a synonym of *disprove* and an antonym of *demonstrate*. However, it also Extends the physical sense from [DESTROYING]; and again there is an Evokes relation from the LU to [BUILDINGS]. This more intricate situation is shown in figure 6.3, with the Evokes relations shown as a dotted line.²¹

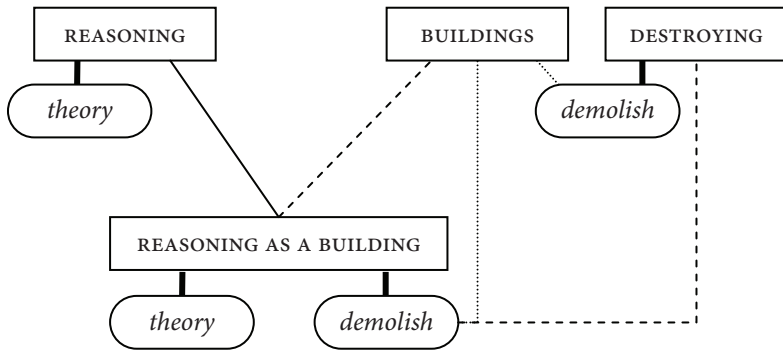


Figure 6.3 A THEORY IS A BUILDING: frames for *demolish*

This system can equally be used to represent metonymic relations—though in metonymy, there is no blending of frames.²² One practical difficulty with representing metaphor and metonymy in a FrameNet-like system is that the number of frames and the complexity of relations can quickly become hard to manage, for which reason some simplifications are often needed.

Another difficulty, particularly with a non-living language, is deciding when a figurative use of a word in a creative context represents

²¹ The diagram is (inevitably) simplified. Given the possibility of non-physical uses of *demolish* and other terms in [DESTROYING], there must be a more abstract image schema to capture the common features of the physical and non-physical uses. To keep the number of frames down, I have chosen to omit this [DESTROYING SCHEMA] frame, and link the metaphoric sense of *demolish* directly to [DESTROYING].

²² Cf. n. 60 on p. 57.

an entrenched sense. However, there are ways around this problem; and as we will see, my system allows not only for LUs, but also for individual annotations to be linked with an ad-hoc frame, so that novel as well as conventionalised imagery may be represented.²³

Indeed, more broadly this may be seen as providing FrameNet with more of a ‘dynamic construal’ approach to lexical semantics. In a dynamic model, the frames associated with a word are not static, nor are they fixed in number; rather, they are dynamically construed.²⁴ Thus, although a traditional lexicographer’s task is to associate a given word with a list of well-defined frames (senses), these should be seen as merely the most conventionalised and commonly construed frames for a given lexeme.²⁵ The dynamic nature of Croft and Cruse’s model also allows them to use the term ‘frame’ as a verb. They ask not simply what (static, stable) frame underlies the use of a word; rather, they ask *how* a word is being ‘framed’ in a particular use. Although there are conventional ways to frame words, these conventional constraints can be overridden—for example, in the creation of novel metaphors.

Of course, trying to represent the dynamic nature of meaning in a FrameNet-like tool adds greatly to the overall complexity of the system. There is nonetheless great potential in such an approach for describing both the conceptual structure and the dynamic flexibility of a language.

²³ Annotation-specific relations are not needed in FrameNet itself, since it is not a full-text annotation project, and the compilers select simpler and more typical sentences for annotation. However, they readily concede that some examples are difficult to place into one category. For instance, Collin Baker, in his detailed Frame-Semantic analysis of *see*, briefly discusses a ‘problematic’ case which involves a blend of two of his frames (Baker 1999, 109).

²⁴ Cruse 2004, 109–40.

²⁵ “Certainly a dictionary . . . does not provide all the possible interpretants of a given linguistic term – this is the job of an ideal encyclopaedia. But even a dictionary at least tries to circumscribe the sense that a given term assumes in the more frequently recurrent contexts” (Eco 2003, 12).

CHAPTER SEVEN

RE-CONSTRUCTING THE THEORY: GRAMMAR

The identification of constructions is essentially a CATEGORIZATION problem, that is, categorizing the utterances one hears or records into discrete types. . . . What occurs in natural discourse are constructions, that is, complex syntactic units; we do not hear individual words with category labels attached to them. Utterances are instances of constructions. A corpus is a set of utterances which can be sorted into different types according to their grammatical properties.

—Croft, *Radical Construction Grammar*

Thus far, my critique and expansion of FrameNet has focused on the semantic aspect of its lexical analysis (that is, frames and FEs). In this chapter, we turn to syntax.

Despite its apparent simplicity, FrameNet's syntactic pole is grounded in Construction Grammar—which is not surprising, given Fillmore's key role in both Frame Semantics and Construction Grammar. However, I noted in chapter 5 (§2.1) that FrameNet's grammatical model must be reconsidered in light of Cognitive Grammar and RCG. This is particularly the case for FrameNet's notion of grammatical functions, which suffer from the problems identified by Croft for supposed syntactic relations (ch. 4 §2.5). How might FrameNet be, so to speak, re-constructed?

Indeed, this is the real sense in which the term 'Radical Frame Semantics' is meant in my method: it is not meant simply to describe the 'radical' nature of Fillmore's Frame Semantics,¹ but even more to indicate my goal of combining Fillmore's (Radical) Frame Semantics with Croft's Radical Construction Grammar. This is the wholly Radical approach: one in which (complex) constructions are the basic units of grammar, and (complex) frames are the basic units of semantic structure.

Having said this, I have by no means attempted a complete integration of frame semantics and construction grammar. Given that

¹ This is how Croft himself uses the expression.

many of the concepts are still in a state of development and flux in cognitive linguistic research, it may be some time before a unified approach is even possible. Nevertheless, the grammatical system which I have used reformulates all the FrameNet categories according to RCG principles. The result maintains the grammatical information currently contained in FrameNet, and adds more; and it also retains FrameNet's ability to correlate syntax with semantics.

1. *FrameNet and RCG: A partial integration*

The essence of my system can be summarised in three points, all of which relate to the annotation of sentences. First, the annotation of any sentence containing a target LU should include *identifying and labelling one or more construction(s) in which the target instance fills a role*. The relevant constructions for our purposes will be those which contain, as well as the target, an element that instantiates a FE in the target's frame. Each of these containing constructions is assigned a **construction type** (CT) label.

Second, the assignment of phrase type labels to surrounding constituents is best understood as *identifying smaller constructions (CT instances) which are parts of, and fill roles in, the containing construction(s)*. PTs are simply treated as CTs, by the meronymic (nested) nature of constructions.

Third, following RCG, I replace grammatical functions with **construction role** (CR) labels, which are assigned to these sub-constructions for the purpose of *identifying and labelling the roles which they fill in the larger construction(s)*.

Thus, CTs identify the relevant form-meaning units at two levels; CRs identify the *syntactic* roles of smaller construction units within the containing CT; and FEs identify the *semantic* components of construction units.

RCG also includes semantic relations between the components. These are not included in the tagging process; instead, they emerge from the frame descriptions, and in particular, from the descriptions of FEs. For example, the FrameNet [TRANSITIVE ACTION] frame contains three core FEs: AGENT, EVENT, and PATIENT. In the frame description, the AGENT is described as "the entity that acts on another entity," the EVENT as "an event in which an agent acts on another entity," and the PATIENT as "the entity that is being acted on and that

may but need not undergo a change.” These articulate the relations between the FEs. Of course, in inherited frames the semantic relations described will be more specific; thus, in the [CAUSE TO BE WET] frame, the AGENT is “a volitional animate being who causes the Undergoer [= Patient] to become wet.”

Although I have implemented this system in only a limited way, for the purpose of FrameNet-style target annotation, it could form the basis for a more comprehensive grammatical analysis of a text. I will illustrate the system with a few BH examples of increasing complexity. To begin with, I will omit the semantic pole of the description (frames and FEs), and will focus solely on grammar/syntax.

2. Two simple examples

The first example is a simple conjoined Verb Clause, which I will analyse for the target Verb *lābaš* “put on, clothe”:

- (1) וְרוּחַ יְהוָה לְבָשָׁה אֶת־גִּדְעֹן
wē-rûaḥ yhwh lābēš-â 'et=gid'ôn
 CO-spirit(CNST) yhwh clothe-3FSG.PRF ACC=Gideon
 “and the Spirit of YHWH clothed Gideon” (Judg 6:34).

The process of annotating this clause, in my system, follows the three points above. First, we identify this clause as a (Hebrew) Transitive Active Clause construction. Second, we identify *rûaḥ yhwh*, the Verb *lābēšâ*, and *'et=gid'ôn* as filling the three roles (CRs) of the Transitive Verb Clause: *rûaḥ yhwh* fills the Subject CR, *lābēšâ* the Verb CR, and *'et=gid'ôn* the Object CR. Finally, we can classify the CTs of the non-target constituents. *rûaḥ yhwh* is a Noun Phrase (or a Construct-Postconstruct Noun Phrase), and *'et=gid'ôn* is an *'et* Phrase.

While CR labels like ‘Subject’ and ‘Object’ may appear to be identical to FrameNet GFs, this is not the case.² ‘Subject’ and ‘Object’ are merely mnemonic labels, which are *not* short for ‘Subject/Object of the Verb.’ ‘Object,’ for instance, does not imply there is a *direct syntactic* relation between the phrases *'et=gid'ôn* and *lābēšâ* (though there is certainly a semantic relation), but rather that *'et=gid'ôn* instantiates a particular element in the Transitive Active Clause—an

² In fact, FrameNet uses the GF category ‘External Argument’ rather than ‘Subject’; but this does not affect the following comments.

element which I have labelled ‘Object.’ Nor does the label imply that there is an atomic, primitive grammatical category ‘Object,’ from which this construction is built. Rather, this is the the BH Transitive Verb Clause Object role.

We could, of course, analyse constructions with similar roles, and abstract a more schematic cross-constructional Object role. I have implemented this to a small extent in my own system (cf. chapter 8), so that CRs are categorised into a small set of schematic construction roles (SCRs). This would allow a strict FrameNet analysis to be carried out alongside a RCG analysis. Nevertheless, these SCRs are derived, not primitive, categories.

The next example is another simple Verb Clause, which we will consider with respect to the target Verb *nātan* “give”:

- (2) יְהוָה נָתַן
yhwh nātan
 yhwh give(3MSG.PRF)
 “YHWH has given” (Job 1:21).

We can identify this as an Intransitive Clause construction. This is, in fact, an unusual construction for *nātan*; constructions with more arguments/roles are more common, such as Indirect Object Clause constructions.³ In a Frame Semantics analysis, the Intransitive Clause can be explained by NI of the GIFT and RECIPIENT FEs.

Next, we identify *yhwh* and *nātan* as filling the two roles (CRs) of the Intransitive Clause—respectively, the Subject and Verb CRs.

3. Multi-level analysis of complex constructions

Identifying the containing CT(s) against which a target instance is being analysed, and reformulating PTs and GFs as CTs and CRs (respectively), actually simplifies the entire model, because everything is now understood in terms of constructions and their constituent roles. It also provides a consistent and unified representation of nested constructions in complex sentences, from their smallest constructional

³ For more on ‘indirect object’ versus ‘ditransitive’ clauses, see Dryer 1986; Croft 2001, 143; 2003, 92, 152). In the HB, נָתַן in the “give” sense is predominantly used in Indirect Object Clauses, not Ditransitive Clauses. Indirect Object Clauses include וְנָתַן אֵלֶיךָ אוֹת אֶזְכָּרְךָ “and he gives to you a sign or a wonder” (Deut 13:2), and לֹא־נָתַתִּיהָ לְשֵׁלָה בְנִי “I did not give her to Shelah my son” (Gen 38:26).

units up to the sentence as a whole: the analysis moves from smaller construction types up to their containing construction types, via construction roles.

I will illustrate this process with the following sentence:

- (3) $\text{וָאֲנִי יֹדְעִי גֹאֲלִי חַי}$
wa-'anî yāda'-tî gō'āl-î ḥāy
 CO-1SG.SBJ know-1SG.PRF redeemer-1SG.POSS living
 “And I know [that] my redeemer lives” (Job 19:25).

Working from the innermost level, we can analyse this sentence with respect to three relational targets: *gō'āl-*, *ḥāy*, and *yāda'-*.

Level 1: *gō'āl-* functions as the semantic head of the Suffixed Noun Phrase construction *gō'ālî* “my redeemer.”⁴ The two roles of this construction, which we will call NP and Suffix, are filled by *gō'āl-* and *î*, respectively. The *î* morpheme is a Suffixed Pronoun construction.

Level 2: The entire Suffixed Noun Phrase construction *gō'ālî* in turn fills a role in the higher-level construction *gō'ālî ḥāy* “my redeemer lives,” which is an Predicate Adjective Clause. In this construction, *gō'ālî* fills the Subject role, and *ḥāy* fills the Predicate role. We have already identified the CT of *gō'ālî* (Suffixed Noun Phrase); and *ḥāy* is simply an Adjective.

Level 3: *gō'ālî ḥāy* in turn fills a role in the top-level construction, which I will classify as a Mental/Cognitive Verb Clause.⁵ The three CRs are Subject, Verb, and Complement; and these are filled, respectively, by *'anî*, *yāda'-tî*, and *gō'ālî ḥāy*. (The Subject referent is also indexed by the verb inflection.) The Subject constituent is an Independent Personal Pronoun.

This three-level analysis is represented graphically in figure 7.1. The heavy boxes indicate the Head element in each construction.

⁴ Given that גֹאֲלִי is the participle form of the verb לְגַאֵל , it might be argued that $\text{וָאֲנִי יֹדְעִי גֹאֲלִי}$ is (say) a Suffixed Participle-Object Phrase. However, whether גֹאֲלִי should be considered a non-finite Verb or a Noun, it clearly has a referential function (“the redeeming one”), not a predication function (“redeeming”). For this reason, I have chosen a Noun Phrase label. If a more specific construction label were assigned, it should at any rate be considered a descendant of the Suffixed Noun Phrase construction. (Note that Andersen-Forbes classifies גֹאֲלִי here as a ‘pure noun participle.’)

⁵ Note that I have simplified things somewhat in assigning a single CT here (see below). In fact, the Subject role need not be overtly specified in such a construction; and more importantly, the use of the “optional” independent pronoun וָאֲנִי would require consideration.

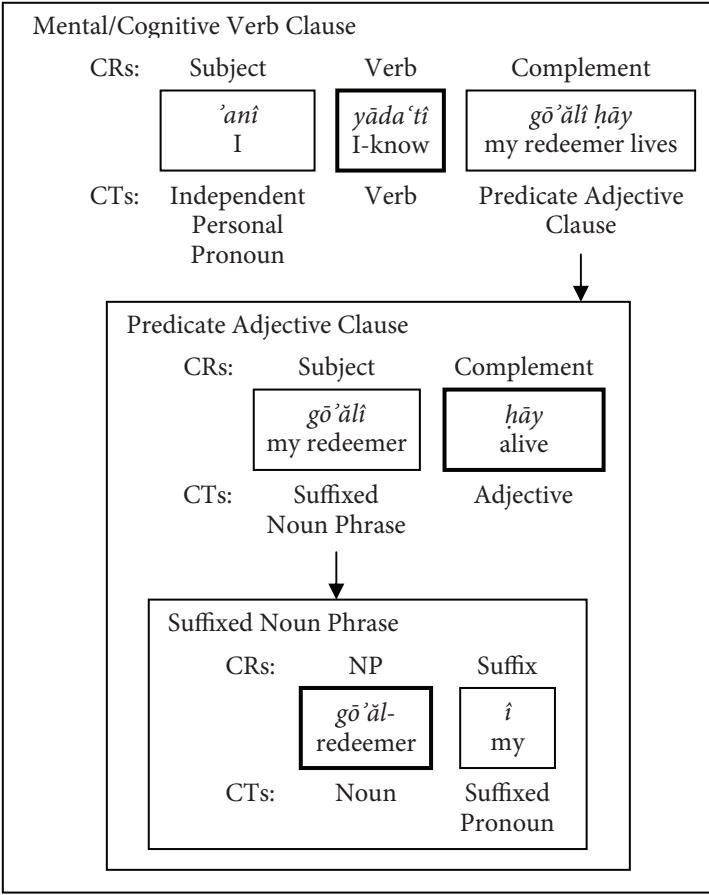


Figure 7.1 Multi-level analysis of a complex construction: Job 19:25

4. Multi-level analysis with adjunct constructions

An important grammatical context which requires a multi-level analysis is the use of adjunct constructions (ch. 4 §3.3). Consider the following English examples:

- (4) a. I sat in the kitchen.
 b. I played my saxophone in the kitchen.

The phrase *in the kitchen* is, in both instances, a relational expression—or alternatively, *in* is a relational term whose two salient sub-

structures are elaborated by *I sat/I played my saxophone* and *the kitchen*. Thus, *in (the kitchen)* in both instances is a modifier.

In (4a) *in the kitchen* is an integral part of the core sentence construction, since *sat* typically predicates a relation between a Subject and a Location (a spatial deictic expression), both of which are highly salient to the verb's meaning and usage. That is, *in the kitchen* is both an Adjunct and an Argument of the sentence Head *sat*.⁶ A schematic construction analysis is straightforward: this is a Location Verb Clause, whose three roles are instantiated by *I*, *sat*, and *in the kitchen*.

In (4b), however, *in the kitchen* elaborates a relatively non-salient aspect of *playing (an instrument)*: the Location in which the playing takes place. Thus, *in the kitchen* is an Adjunct but not an Argument of the Head *played*. This is best analysed as a two-level construction combination.⁷ *I played my saxophone* instantiates the core *play* (or Transitive Verb Clause) construction, and the entire sentence instantiates a higher-level *in-PP* construction. The two constructions, and the nested analysis of the sentence (4b), are shown in figure 7.2.

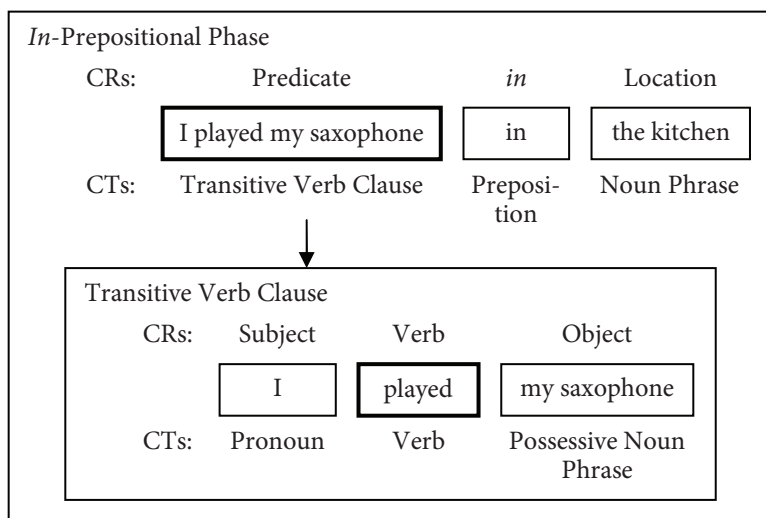


Figure 7.2 Multi-level analysis with an Adjunct construction

⁶ Cf. example (32) on p. 105.

⁷ Cf. the Construction Grammar presentation of this in Kay and Fillmore 1999, 11–12.

As well as being more theoretically satisfying, the multi-level, multi-constructional analysis provides a hint as to how we might go about utilising grammatical information in lexico-semantic studies, using a RCG paradigm. If we begin to list the acceptable types of Adjuncts that may occur with the Transitive Verb Clause in (4b)—Adjuncts for time (*at night*), duration (*all night*), manner (*like Charlie Parker*), and so on—they resemble the kinds of peripheral FEs which might occur in FrameNet for the target *play*. In my grammatical analysis, these are higher-level modifying constructions, in which the core construction functions as the semantic Head.

Thus, to analyse the verb *play*, we need to analyse the core predicating constructions in which it occurs, as well as any higher-level predication-modifying constructions. The former will tend to yield data relevant to core FEs, and the latter to more peripheral FEs.

5. Construction blending

In the last two examples, we have seen that a clause will often involve complex constructions at several levels. In addition, simpler clauses or phrases may involve blending of constructions. In example (3), the argument structure for the Verb *yāda* ‘know’ is a type of Transitive Verb Clause; but the use of the Independent Personal Pronoun *ʾanī* signals the blending of the Transitive Verb Clause with a rhetorical device that we could call the Fronted Subject Pronoun construction (cf. *IBHS* §36.1).

As an aside, a system allowing blended or overlapping CTs could be used to incorporate several complementary, or even competing, construction classification schemes, and ultimately to compare their usefulness. For example, the two recent syntactically tagged electronic texts of the HB have very different primary classification systems for Verb Clauses in BH: WIVU uses categories such as 0-*qāṭal*, Sbj-*qāṭal*, *w-qāṭal*, *w-X-qāṭal*, *wayyiqṭōl*, and so on, while the Andersen-Forbes approach resembles the Clause CTs I have used in the examples above (Intransitive Verb Clause, Transitive Verb Clause, etc.).⁸ Which is preferable—or do we need both?

⁸ I am here reformulating the Andersen-Forbes labels, which are based on putative syntactic relations between Clause constituents, in constructional terms.

Fortunately, we do not necessarily need to decide this in advance. Returning to sentence (1), I classified this as a Transitive Verb Clause. However, we could also use the WIVU classification system and *simultaneously* identify it as a *w*-Sbj-*qāṭal* construction. The two CTs specify different formal and semantic properties of a sentence. Transitive Active Clause specifies a particular argument structure (valence) and voice, with a schematic representation of the (prototypical) semantic relation between the components; but does not specify the verb conjugation, word order, or clause conjunction. The *w*-Sbj-*qāṭal* construction does not specify the argument structure or voice, but does relate to conjunction, partial word order, a tense/aspect/mood combination (whose assessment depends, of course, on one's position on the BH verbal system), as well as discourse features such as foreground/background, action/state, markedness, various narrative functions (such as introduction of a participant or prop), and so on.⁹ Similarly, then, sentence (3) could be given three complementary CTs: Mental/Cognitive Verb Clause, *w*-Sbj-*qāṭal*, and Fronted Subject Pronoun.

For present purposes, I have chosen to use a constructional form of the Andersen-Forbes style of categorisation—which in essence corresponds to Goldberg's 'argument structure constructions' (Goldberg 1995). Given the aim of FrameNet to study valence patterns for relational terms, the WIVU categories are less relevant.¹⁰ I also do not include the order of elements in valence/voice constructions; again, variations in word order are best treated as secondary constructions which are merged with the relevant valence/voice construction (Croft 2001, 26; Goldberg 2003a, 221).

⁹ Discourse analysis of BH is outside the scope of this study; though for helpful summary discussions, see van der Merwe 1994, 1997; and van Wolde 1997.

¹⁰ Joan Bybee's typological study of verbal inflectional categories, and their relation to morphology, may provide evidence for more fundamental and unqualified reasons to prefer the valence/voice categories over those of WIVU (Bybee 1985, chap. 2, also discussed in Croft and Cruse 2004, 304–5). The aim of the study is to identify, using a sample of 50 essentially unrelated languages, which categories tend to have higher semantic 'relevance,' where a change to a more highly relevant inflectional category yields a greater change in the verb's meaning. Bybee's claim is that there is a hierarchy of inflectional categories, ranked from highest to lowest relevance: valence, voice, aspect, tense, mood, and (number/person/gender) agreement. However, see the thorough critique in Aronoff 1987.

6. *Constructions and valence patterns*

Since my RCG method assigns to each annotation one or more CTs, which must be integrated into the data, producing valence patterns is more complex. The relevant constructions for frame semantic analysis are those which contain both the target and another constituent that instantiates a FE in the target's frame.

Furthermore, as we saw in §4, the most significant constructions are those in which the target *depends* (in Langacker's sense: ch. 4 §3.3) on the other FE-expressing element—that is, where the latter is an Argument with respect to the target. If such a construction exists for a given target, I will call it a **target-framing construction**. For verbal LUs, typical target-framing constructions include transitive clauses, intransitive clauses, and so on; and for nominal LUs, they include various modifying constructions (genitival and adjectival) as well as nonverbal predications. In many if not most instances, a frame-evoking target will participate in one (and only one) target-framing construction.

My radical approach to producing valence descriptions gives priority to these target-framing constructions, but it also incorporates Adjunct constructions, which tend to relate to more peripheral FEs.

The resulting system uses a modified form of the FrameNet terminology. As in FrameNet, the list of patterns is arranged by sets of FEs, or *FE configurations*.¹¹ Each FE configuration includes all the core FEs (or coreness sets), including those profiled by the target LU, along with any non-core FEs expressed by relevant construction elements.¹²

For each FE configuration, a list of *valence patterns* is given; but these are organised by *construction types*—in particular, by the CTs of target-framing constructions. A single valence pattern takes one such construction, and correlates its constituent elements with a FE configuration: for each FE instantiated by a construction element, it identifies the CT of that element and the CR it fills in the parent construction. If there are core FEs that are not expressed by any unit in this construction, the appropriate NI label is applied.

¹¹ Cf. fig. 5.2 on p. 132.

¹² In fact, it is not strictly necessary that all the 'core' FEs should be included in each FE configuration, given the relative and gradient nature of valence and coreness. However, if the core FEs are selected carefully, including them in each configuration should not cause problems.

At a higher level, the association of a FE configuration with a construction—that is, a set of FE-CR pairs for one construction—is called a **valence construction schema**. This adds an extra level of analysis to that found in FrameNet. The two systems are compared in figure 7.3, using the following sample sentences adapted from [TELLING].*tell.v* in FrameNet 1.3.

- (5) a. “Yes, [I]_{SPEAKER} **told** [her]_{ADDRESSEE} [my theory]_{MESSAGE},” he said under his breath.
 b. [He]_{SPEAKER} had **told** [Raoul]_{ADDRESSEE} [the good news]_{MESSAGE}.
 c. [She]_{SPEAKER} **told** [me]_{ADDRESSEE} [that 99 per cent of men who’ve been abused turn into abusers]_{MESSAGE}.
 d. [This chapter]_{SPEAKER} **tells** [you]_{ADDRESSEE} [how to do it]_{MESSAGE}.
 e. [She]_{SPEAKER} **told** [her dream]_{MESSAGE} [to Mrs Welsh]_{ADDRESSEE}.
 f. [I]_{SPEAKER} didn’t **tell** [him]_{ADDRESSEE}. [DNI]_{MESSAGE}
 g. “Mother, [I]_{SPEAKER} **told** [Father]_{ADDRESSEE} [on the phone]_{MEDIUM}.”
 [DNI]_{MESSAGE}

In figure 7.3b, I have simply adopted the same labels for constituent CTs as those used for PTs in FrameNet; these will change for BH. The obvious immediate advantage of the system in figure 7.3b is that it shows the range of constructions in which the target LU appears. In addition, the CR configurations are separated out from the constituent CTs (valence patterns) themselves, making it easier to see at a more schematic level how constructions are correlated with FE configurations.

There are some more minor differences from FrameNet’s presentation. I include a column for the referential argument of the target itself, marked in valence patterns with an asterisk (*). In addition, Adjunct constructions are indicated in the ‘Other’ column.

Of course, this system falls well short of a detailed analysis of constructions and construction relations. There is very little provision for representing the relational and/or indexing strategies (prepositions, agreement, word order, and so on) by which a construction encodes symbolic links. It does, however, give constructions a significant position in frame-semantic analysis of words and their valence patterns.

7. Looking forward

To finish Part Two of this study, we will look forward to two possibilities which, though still a long way off at the current stage of scholarship, would be exciting and ambitious goals for this line of research.

(a)

Valence pattern

7x

SPEAKER

ADDRESSEE

MESSAGE

2x

NP

NP

NP

← PTs

Ext

Obj

Dep

← GFs

1x

NP

NP

Sfin

Ext

Obj

Dep

1x

NP

NP

Sinterrog

Ext

Obj

Dep

1x

NP

PP-to

NP

Ext

Dep

Obj

2x

NP

NP

DNI

Ext

Obj

-

Ext = External Argument

Dep = Dependent

Sfin = Declarative Finite Complement Clause

Sinterrog = *Wh*-interrogative Clause (including *how*)

(b)

Constructions

↓

Valence construction schema (with CRs)

Valence pattern (with CTs)

	7x	SPEAKER	TELLING	ADDR.	RECIP.	Other
Ditransitive Clause		Sbj	Verb	Obj1	Obj2	
	2x	NP	*V	NP	NP	
	1x	NP	*V	NP	Sfin	
	1x	NP	*V	NP	Sinterrog	
Indirect Object Clause		Sbj	Verb	IObj	DObj	
	1x	NP	*V	to-PP	NP	
Transitive Clause		Sbj	V	Obj		
	2x	NP	*V	NP	DNI	MEDIUM: on-PP (1x)

Figure 7.3 Valence descriptions in (a) FrameNet and (b) Radical Frame Semantics

7.1. *Frame semantics and the ‘constructicon’*

In Radical Construction Grammar, the grammatical knowledge of a speaker is knowledge of constructions (as form-meaning pairings), words (also form-meaning pairings), and the mapping between words and the constructions they fit in. The mapping between words and constructions is many-to-many: a word fits into many different constructions, and constructional roles can be filled by many different words. . . . This model can of course be extended to constructions that have other constructions, not just words, as component elements. (Croft 2001, 46)

One goal of Frame Semantics (and FrameNet in particular), though it is rarely mentioned, is the full integration of construction grammar with frame semantics.¹³ Such an endeavour would be very complex, though at least a partial integration is important, given FrameNet’s goal of correlating semantics with syntax.

Nevertheless, the larger question remains, what is the relationship between construction grammar(s) and frame semantics? Beginning with the foundational assumption of construction grammar, if (i) all grammatical knowledge, from atomic to complex constructions, is symbolic (form/meaning pairs), and if (ii) the semantic aspect of LUs is largely describable in terms of frame-like structures (participants or props with various features and interrelationships), then it may be that frames are a useful vehicle for describing the semantic aspect of many more complex and/or schematic constructions. Indeed, construction grammars commonly speak of the *semantic roles* or *components* of a construction’s semantic structure; there is little difference between these and FEs. This would imply that, in many cases, recognition and interpretation of a complex construction instance involves *frame blending*, where the input frames are those evoked for the complex construction and for each of its elements, including LUs.

Just as frame semantics involves the difficulty of trying to identify a suitable set of conceptual frames for a given language and to map out

¹³ Fillmore, private correspondence. See also Petruck 1996. Fillmore’s paper presented at The Fourth International Conference on Construction Grammar (ICCG4) (Fillmore 2006) announced his hopes of beginning a project to integrate constructions into FrameNet. Indeed, in 2008–9 the FrameNet team worked on a project to analyse and describe “interesting” syntactic constructions in English (see <http://framenet.icsi.berkeley.edu/>). The presentation format is similar to FrameNet itself, though at this stage there is no apparent integration between the two systems.

their interrelationships, so in construction grammar we face the problem of identifying the relevant constructions, from fully schematic to substantive, and organising them in a ‘constructicon.’ In this task, a FrameNet-like tool begins with (i) the frames with their LUs and (ii) a fairly small set of highly schematic constructions. An immediate fruit is thus discovering the types of schematic argument structure constructions that tend to occur with particular LUs.

Of course, such a tool may also be used in the opposite direction: to catalogue the constructions used in BH, and the substantive expressions or expression-types permitted in each. In the longer term, it may also be used to aid in identifying candidates for more substantive constructions in the BH constructicon.

This would still fall far short of the ultimate goal: a tool to provide a consistent way of representing the grammatical and semantic information (with symbolic links between these) for every language element, from words to clauses—even from morphemes to discourse units. In theory, this should be possible. It may be that frames, or something like them, would feature in the semantic representation at every level, as it is in Benjamin Bergen and Nancy Chang’s Embodied Construction Grammar (Bergen and Chang 2005). An element instantiating a construction with an abstract (prototypical) semantic value, like a Transitive Active Clause or a *hip ‘il* Verb, would be linked to an abstract frame describing this prototypical ‘meaning.’ Of course, the lexical units themselves would be linked to other frames, as may some larger (semi-)substantive constructions; and the meaning of the whole would depend on a complex interaction between all these. Such a tool is yet to be developed for any language.

As an aside, in this more comprehensive constructicon, it may well be that more general θ -roles and many extra-thematic FEs find a natural place. Standard θ -roles such as AGENT, PATIENT, THEME, and so on, would appear in the semantic structure of schematic clause structures (like Transitive Active Clause), and extra-thematic FEs would feature in both subordinate clause schematic constructions and characteristic complex-event or extended event construction schemas (such as Resultative constructions).

In the case the θ -roles, there is no contradiction in relating them on the one hand to relatively generic/schematic semantic frames (ch. 5 §1.3), and on the other to schematic constructions. Many schematic semantic frames, I would suggest, represent the semantic structure of

schematic constructions, just as the semantic structure of highly-specified (partly-substantive) constructions is often frame-like.

Once again, this more clearly defines the place of θ -roles and frame-specific roles—not just in lexical semantics, but in grammatical analysis more generally. There is, in fact, no qualitative or categorial difference between them; rather, the difference is in the semantic abstractness or schematicity of the constructions (lexical or otherwise) against which they are defined.

7.2. *BH electronic texts and frame semantics*

The recent publication of two syntactically analysed electronic versions of the MT, the Andersen-Forbes and WIVU databases, has enormous potential for frame semantic analysis. It should be possible to superimpose a layer of frame-based semantic data, linked to the semantic analysis, in either of these databases—though this would present challenges for data format and retrieval.¹⁴ The German-language SALSA II project would provide an excellent model for such a task, for several reasons.¹⁵ SALSA II begins with a syntactically analysed text corpus, and extends it with frame-semantic information. Unlike FrameNet, it allows for multiple frame-evoking words in a single sentence to be annotated independently as targets. Moreover, it uses an excellent graphical representation of the frame-semantic structure of annotations. The software presents a tree-based visual representation of the syntactic structure of a sentence (much like Andersen-Forbes). When a frame is associated with a word in the sentence, a node for the frame is added to the interface, along with connected nodes for each of the FEs. To associate a FE with a sentence constituent, the annotator simply drags the FE node onto a node in the syntax tree.¹⁶

¹⁴ On FrameNet's data format, and the advantages and disadvantages of various approaches, see Baker, Fillmore, and Cronin 2003. However, the difficulties would be far greater for a frame-enabled Andersen-Forbes/WIVU database. Also noteworthy is Wolfgang Richter's monumental *Biblia Hebraica transcripta* (BH') project (Richter 1991–1993), whose aims overlap with those of WIVU and Andersen-Forbes. However, its clausal analysis is limited (Verheij 1995), and I am not aware of its public availability in electronic form. Jan Kroeze (2004) has also proposed a system for electronic capture and manipulation of BH clauses.

¹⁵ See n. 2 on p. 107.

¹⁶ For a discussion of the XML format used to represent the text with its syntactic and semantic analyses, see Erk and Padó 2004. At the time of writing, the SALSA II

Andersen-Forbes and WIVU have taken us from BH morphology searches to syntax searches. The approach of Salsa II would allow us to ascend to another level still: semantic searches. Indeed, complex searches combining morphology, syntax, and semantics would theoretically be possible. Rather than searching for every instance of שָׁפֵט “judge” where the grammatical Subject is אֱלֹהִים “God” or יהוה “YHWH,” we could search for every instance of a word evoking the [FORENSIC VERDICT] frame where אֱלֹהִים/יהוה expresses the JUDGE; or we could search for every noun evoking [FORENSIC VERDICT] which is the Construct element in a Construct-Absolute construction, where the Absolute expresses the DEFENDANT.

Of course, this would require an enormous amount of work, and the technical difficulties would be significant. Nevertheless, the benefits for BH semantic analysis and lexicography would, I believe, make the effort well worthwhile.

software tool (SALTO) was available to download, along with a very small sample corpus consisting of two sentences.

PART THREE

FRAME SEMANTICS AND BIBLICAL HEBREW

CHAPTER EIGHT

APPLYING THE FRAMEWORK TO BIBLICAL HEBREW

In this final section, we turn to the application of the theoretical framework to lexical semantic analysis of BH. In this chapter, I will address some preliminary issues, before beginning the analysis proper in chapter 9.

1. *The ancient language problem*

If it is true . . . that words evoke the typical contexts of their use, the contexts have to do, not only with the extra-linguistic situation and with conceptual theories, but also with language-internal [paradigmatic and syntagmatic] relations. And in the study of older forms of a language, or of a dead language, the language internal evidence is pretty much all there is to go on. (Taylor 2003, 177)

The most obvious problem we face in studying the semantics of BH is that we are dealing with an ancient language—moreover, one with a limited corpus, a complex history, and textual uncertainties.¹ Modern empirical semantic studies rely heavily on the intuitions and judgments of native speakers as to the normality or oddness of statements (e.g., Cruse 1986).² Despite its continuity with modern Hebrew, the lack of native speakers of BH means that modern methods cannot be used without modification.

These difficulties seem to intensify when we try to adopt methods from cognitive linguistics, in which the focus is on concepts in the minds of native speakers and hearers. The ultimate goal of cognitive approaches is to describe languages and texts in terms of the cognitive processes and structures of the language's speaking community.

¹ See the introductory section of Verhagen 2003 for some insightful comments.

² Barr comments that "If philology has its centre in the study of classical texts, linguistics has its centre in the observation of spoken languages" (Barr 1969, 37). Note also Cruse's rather depressing summary of the study of dead languages: "Often virtually the only direct evidence available to [researchers] is a corpus of written utterances, of somewhat fortuitous make-up, and now probably fixed for eternity" (Cruse 1986, 9). In the case of BH, the rich tradition and continuity of knowledge is an enormous help, but the textual corpus is fixed and limited.

In light of this, it must be asked whether cognitive approaches are even relevant to BH semantics. Indeed, in my discussions with various people on this topic, this is usually the first objection raised: given that we have no access to the minds of speakers from antiquity, surely there is no place in BH semantic studies for cognitive linguistics, dynamic construal, conceptual frames, and cognitive metaphors.³

I suggest the reverse is true: despite this lack of access, we *must* adopt a cognitive perspective. The objectors are quite right to raise the uncomfortable issues. But rather than prove the irrelevance of, for instance, frame semantics to the study of a dead or ancient language, these issues are *inevitable and unavoidable* when studying an ancient language, no matter the method used. At least, this is true if the basic axiom of cognitive semantics holds: that “meaning resides in conceptualization” (Langacker 2003, 180).⁴

In other words, if meaning really is inherently conceptual, then the problem of lack of access to the mind cannot be skirted simply by adopting a non-cognitive approach. To pretend that meaning can somehow be detached from conceptualisation is to adopt a dangerously deficient methodology.

The fact must be faced: it is very difficult to access the meaning of ancient texts—period. So how are we to approach the semantics of BH? We have a number of resources at our disposal. First, and obviously, we have the texts themselves—primarily the MT, albeit via a less-than-perfect transmission process. Second, these texts come from a wider family of languages and text corpora. Third, we have a tradition of interpretation of these texts and the words they contain—a tradition which runs from the earliest Versions and expositions, foremost among which is the LXX,⁵ to modern-day exegetes, theologians, lexicists, and so on.

However, we also have a recent resource that relates to the minds of the speakers rather than to the texts themselves, namely, a growing body of research on human cognition and how this relates to language and meaning. My focus in this study is on this resource: ex-

³ We must be careful with statements such as this (admittedly contrived) one. In fact, neither do we have ‘direct access’ to the minds of native speakers of a *modern* language: except for self-analysis, there is always a gap. Nevertheless, the death of all the native speakers does broaden the gap considerably!

⁴ See my introductory comments in chapter 3.

⁵ Cf. Muraoka 1995b, 2003.

ploring how it may be used both in understanding and in presenting the meanings of words in the HB.

Studying the meaning of the texts requires a cyclic, inductive approach. The central activity, of course, is examining all extant occurrences of the relevant terms; but this is done in the context of the history of interpretation, comparative philology, and cross-linguistic and cognitive research into the nature of language and conceptualisation. The aim of a syntactic analysis of this kind—and thus the particular methods chosen for examining the texts—must be to form and defend hypotheses, to whatever degree of certainty may be possible, regarding the conceptual structures in the minds of the authors of the HB, which underlie and are reflected in their language system.⁶ Indeed, many of the methods which arose outside cognitive linguistics, such as analysis of paradigmatic and syntagmatic relations, may be harnessed for such a purpose and used in conjunction with overtly cognitive methods.⁷

In 2002, a colloquium organised by the Royal Netherlands Academy of Arts and Sciences in Amsterdam brought together scholars from cognitive linguistics, Hebrew semantics, and biblical studies, to explore ways in which each discipline could benefit the others (van Wolde 2003c). One of the outcomes of the colloquium was a greater realisation of the difficulties faced by biblical scholars who seek to apply cognitive methods. James A. Loader, reflecting on the papers presented, observes that

the difficulty of reading [the ancient Hebrew] texts is that the resources we have for gleanings information on the cultural background, historical setting, the experiential background of language in actual use and so on are extremely limited. Not only are they restricted, but also very hard to come by, so that a number of fully-fledged disciplines, such as ancient Near Eastern studies, Semitics, archaeology, the history of religions, the history of ancient Israel and so on are necessary to provide the material with which we have to work. Therefore it is not so easy for biblical scholars to fulfil the prerequisites for implementing the insights of cognitive linguistics in a meaningful way. (Loader 2003, 322–23)

Quite rightly, Loader's response to these difficulties is not to retreat from cognitive methods, but to rethink the entire hermeneutical

⁶ Cf. Van Hecke 2003c, 143.

⁷ Cf. Aitken 2003, 127–28; Cruse 2004.

process for the HB, and particularly the “conditions of understanding” (2003, 324). To do this, Loader urges the need for integration of the many sub-disciplines required for exegesis, through interdisciplinary cooperation.

The point is that cognitive linguistics neither creates nor exacerbates these difficulties. The difficulties are already unavoidably present. A cognitive perspective sharpens our awareness of these problems, and forces us to face them rather than ignore them.

2. *Corpus and parameters of the study*

A few brief comments are required on the corpus used for this study, and the way in which it will be used. The corpus selected is the canonical books of the Hebrew Bible, based for the most part on the Masoretic Text (MT). Of course, this forms only a subset of the corpus of extant Classical Hebrew texts, which also includes Sirach, texts from Qumran, and inscriptions and other occasional texts.⁸ The study could potentially be broadened to include these. However, M. O'Connor (2002, 193–200), in his insightful review of twentieth century BH lexica, severely criticises *DCH* for including all these sources on an equal footing. On the grounds of historical linguistics, O'Connor argues that the inscriptions and the DSS are of a markedly different character to the HB and Sirach, the former being “to varying degrees archeologically datable” and the latter “undatable literary texts preserved in a manuscript tradition” (193). Moreover, the language of Sirach and the DSS is, far more than that of the HB, “a scriptural language, a language full of quotations and paraphrases” (194). On the grounds of lexicographic procedure, O'Connor argues that the non-biblical texts are “much less thoroughly controlled and understood than the biblical text,” and that “in many cases the Dead Sea Scroll texts in particular have barely begun to be discussed by scholars” (195).⁹ The more limited BH corpus, rather than Classical Hebrew, may therefore be judicious at this stage of scholarship.¹⁰

⁸ Cf. *DCH* I.14; Muraoka 1995a, 89; 1998, X. According to David Clines (*DCH* I.28), the text of the *BHS* comprises 86.4% of the total length of the Classical Hebrew corpus, so we are studying a significant proportion of the extant material.

⁹ For similar reservations, see Muraoka 1995a, 88; Andersen 1995, 54–55.

¹⁰ In light of the references cited in n. 8 above, I find it hard to accept William Schniedewind's complaint that the term ‘Classical Hebrew’ is “often understood as

The focus of this study is *synchronic, intra-lingual* analysis of BH, rather than dwelling on pre- or post-biblical development or comparative philology. This is not because comparative philology has no place in this type of study. Indeed, although it has in the past been misused, and although it dominated the description of BH for perhaps longer than it should have (van der Merwe 1987, 168–69), comparative philology has at times proved invaluable and necessary in BH lexical semantics.¹¹ However, philological suggestions are appropriate where analysis of the immediate corpus has failed (Barr 1962, 154). One of the strengths of Saussurean structuralism, in contrast with earlier approaches, was the emphasis on describing a language “on its own terms: without its history and apart from comparisons to languages, related or unrelated” (*IBHS* §3.3.5b);¹² and as far as possible, this should guide BH linguistic analysis. The terms chosen for this study are frequent enough that an intra-lingual analysis is perfectly feasible, which leaves us free to concentrate on the main topic: applying cognitive linguistics to BH lexical semantics.

Finally, although the MT forms the base for this study, and although I hold in high regard the transmission process which ended with the MT, textual criticism is an important precursor to grammatical and semantic analyses. Whatever the difficulties—and there are a

synonymous with Biblical Hebrew,” and is “mostly a construct of Protestant theologians” (Schniedewind 2004, §3.1). Whether or not this accurately describe the view which predominated in the past, *DCH* reflects the position of most present-day biblical scholars, including those who are rooted in the Christian tradition. My own use of the term ‘Biblical Hebrew’ in the title of this book is in no way based on the view that the language of the Bible (or Hebrew in general) is inherently different from ‘ordinary’ languages, but simply because the corpus that I have selected is the HB. Schniedewind himself supports this use of the term ‘Biblical Hebrew.’

¹¹ Cf. Barr 1992, 142; Sáenz-Badillos 1993, 5. J. A. Emerton presents a balanced appraisal of the continued importance of comparative philology in certain situations, along with the pitfalls and invalid uses of such material (Emerton 1997). He concurs with David Clines (*DCH* I.18) that there is “usually a quite complex set of evidences” for assessing the meaning of a Hebrew word; yet he catalogues instances in which the initial breakthrough for Hebrew scholars (either for the meaning of a single LU or for identification of a homonym) came solely through the discovery of a Semitic cognate. Thus, in some cases the Hebrew meaning was discovered through the “combination of cognate and context” (Emerton 1997, 19). I will not here assess the wisdom of David Clines and Luis Alonso Schökel in entirely omitting comparative Semitic information from, respectively, *DCH* and *Diccionario bíblico hebreo-español* (Alonso Schökel 1994); though see the careful discussion in O’Connor 2002, 201–4.

¹² Cf. also Lyons 1977, 243–47; van der Merwe 1987, 168.

great many—with the possibility of recovering the final canonical form of the HB (let alone the ‘original’ text), from a linguistic perspective it is important to reconstruct as best we can the text from the era in which it was still (more or less) a living language. That is, I am interested in the frames and profiled senses as understood by a text’s language community—its author(s), compilers, redactors, editors, readers, and hearers—rather than the frames and senses as understood by the Masoretes, or any other subsequent interpreters.

Of course, to speak in this way of studying *the* frames and profiled senses of a portion of the HB is an idealisation, given its complex and lengthy process of production and editing. Nevertheless, my aim is to examine the *ancient* meaning(s) of the *ancient* text of the HB—precisely because I hold that these should take priority over later forms and interpretations for linguistic study.

This is in stark contrast to John Sawyer, who in his study of ‘salvation’ terms (Sawyer 1972) selects as his object of study “the final form of the text as preserved in masoretic tradition and transmitted to us in the Codex Leningradensis” (without emendations), and “how the masoretes themselves understood the text” (Sawyer 1972, 11). More significantly, he claims that this decision is entirely arbitrary—as would be the decision to adopt any other form and interpretation, whether ancient or modern, as the object of semantic analysis. He justifies this claim by appealing to the principles of descriptive linguistics: modern linguists “describe what is there without passing value-judgments,” and therefore *every* “historical contextualization” is as important as any other “for a complete description of the meaning of the text” (Sawyer 1972, 9).

This argument is a misuse of the descriptive, non-judgmental nature of modern linguistics. The descriptive stance pertains to the importance of describing what a text *does* mean (at a given point in its history), as opposed to declaring what it *should* mean (i.e., prescriptive linguistics). However, the vast majority of modern descriptive semantics is concerned with the synchronic study of living languages, not the diachronic issues addressed by Sawyer. Of course, there must be a place for evaluating and judging how interpreters of an earlier text have understood that text—especially when those interpreters see themselves as preserving the original text, yet are no longer part of the same language community. Nevertheless, Sawyer’s position amounts to claiming that the misunderstandings of a non-native speaker con-

cerning the meaning of a word in an ancient text is part of a “complete description of [its] meaning”—and, moreover, that the earlier language community’s understanding must not take priority over the non-native speaker’s later misconstruals.¹³

None of this means that the understanding of the Masoretes is an *invalid* object of study; nor need we dismiss the religious significances that later interpreters drew out of the texts, which were not intended by or apparent to the original community. However, it does mean that the choice of object for such a study is *not* an arbitrary decision, as Sawyer claims. From a linguistic point of view, the text (in the Saussurean duality of form *and* meaning) as it emerged from the native speech community must have a certain priority when examining later understandings, whether inner-biblical, Masoretic, or current.

3. *HebrewNet: Frame-based annotation of the MT*

Having set up the theoretical basis in Parts I and II, a few comments are needed on my method of applying it to BH.

A key component of my method was the development of a prototype software package called HebrewNet, for frame semantic analysis and annotation of the MT. It is modelled on the software developed for FrameNet, although there are a number of differences.¹⁴

One significant difference is that HebrewNet adds the ability to identify potential *paradigmatic* relations in the text. Thus, if a target instance occurs near a near-synonym, complementary term, etc, this can be included in the annotation of the verse. The most obvious candidates for paradigmatic relations emerge from parallelism (both poetic and non-poetic),¹⁵ but need not be restricted to these cases.¹⁶

¹³ Barr’s comment is pertinent: “The dictionary has to give account of the lexis of a language as it was. If a particular text contains forms that were not part of the usage of the language, or that were not used in the same proportion, then the dictionary would distort the realities of the language if it did not point out that the text might require correction” (Barr 1992, 150).

¹⁴ For descriptions of the FrameNet database and the client software used to manipulate it, see Baker, Fillmore, and Cronin 2003; Fillmore, Petruck, et al. 2003.

¹⁵ Cf. Berlin 1985.

¹⁶ I adopt a fairly cautious approach to paradigmatic relations, particularly with potential near-synonyms: initially, I mark these provisionally as ‘compatibles.’ Similarly, in the case of an apparent relationship of unlikeness, I use ‘antonymy’ only in the clearest cases, and otherwise use the more general ‘incompatibility.’

HebrewNet, like FrameNet, is built on a relational database that notionally has two parts: a lexical component, which contains frames, FEs, and LUs, and an annotation component, which contains annotated text extracts (verses in HebrewNet, sentences in FrameNet) for the various target LUs. The data is created and manipulated by custom-built client software, which can also export reports.¹⁷

3.1. *Frames, FEs, and LUs*

The process of defining frames and FEs in HebrewNet, and associating LUs with frames, is essentially the same as that in FrameNet. The main HebrewNet window shows a list of frames in a side panel, and these can be expanded to show their constituent FEs and LUs. Frames may be opened or created in the Frame Editor (fig. 8.1). The Frame Editor allows editing of the name and definition of the frame, and displays the FEs, LUs, and frame-to-frame relations defined for the frame. From the Frame Editor, FEs and LUs may be opened in their respective editors (fig. 8.2). An FE may be defined, marked as Core or Extrathematic, and assigned a foreground and background colour for identification in the Annotation Editor and exported reports. A LU—which, in the case of Verbs, is *binyan*-specific—can be assigned a definition (though in many cases the frame's definition is sufficient), and any LU-to-frame relations are displayed.¹⁸

3.2. *The annotation process*

Unlike FrameNet, which draws sentences for annotation from a separate corpus, HebrewNet includes its corpus (the MT) in its database. The electronic text used is the Groves-Wheeler Westminster Hebrew Morphology (WHM), though in a modified form: it has been converted from ASCII text to the Unicode Standard,¹⁹ and Suffixed Pronouns have been separated off as independent units. For example, whereas **וַיִּחְקְרֵה** in Judges 18:2 contains three units in WHM (**וַי**, **חְקַרְ**, and **הַ**), in my database it has four (**וַי**, **חְקַרְ**, **הַ**, and **הַ**).²⁰ This is

¹⁷ The HebrewNet software currently generates only Annotation Reports; adding automated Frame and LU Reports would be fairly simple.

¹⁸ HebrewNet does not currently provide a way of adding frame-to-frame or LU-to-frame relations; these must be added to the database by hand.

¹⁹ See The Unicode Consortium, <http://www.unicode.org/>.

²⁰ Such units are called *segments* in Andersen and Forbes 2006.

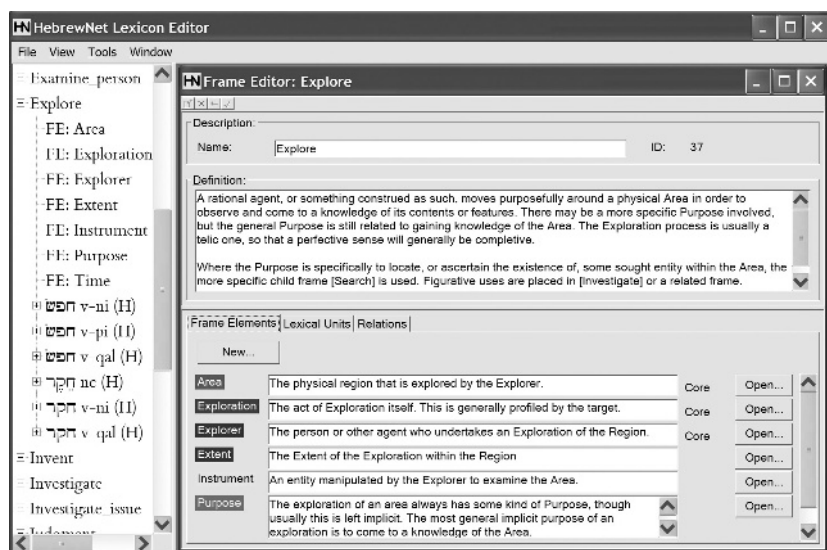


Figure 8.1 HebrewNet Frame Editor

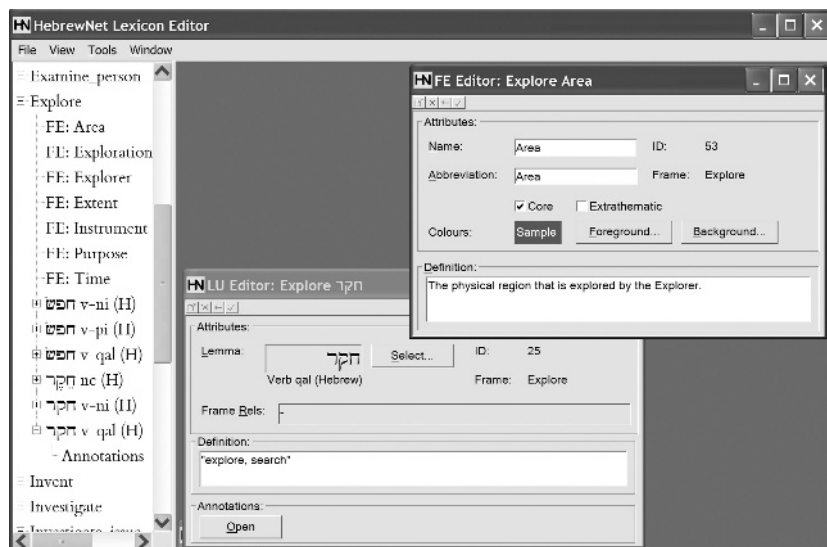


Figure 8.2 HebrewNet FE and LU Editors

important, since in this case, if the verse is annotated against the target [EXPLORE].הִקְרָה, the Suffixed Pronoun instantiates the AREA FE.²¹

The process I used in annotating target instances from the MT has three steps. First, the software is used to search for all occurrences of a given lexeme or 'lemma,' such as הִקְרָה (*qal* Verb) (fig. 8.3). These are all assigned to the lemma itself; that is, they are not yet associated with LUs or frames. Secondly, these instances may be edited in the Annotation Editor for everything *except* frame-related information; specifically, they may be annotated grammatically, and any potential paradigmatic relations may be identified. Finally, those instances that are deemed to belong to a particular frame may be *transferred* from the lemma to the appropriate LU (for instance, from הִקְרָה to [EXPLORE].הִקְרָה), where the annotation process is completed through the assignment of FEs to constituents (fig. 8.4). The separation of the second and third steps encourages a pattern of moving from grammatical to semantic analysis.

For the most part, the design and structure of the HebrewNet database is modelled on that of FrameNet (Baker, Fillmore, and Cronin 2003), but the representation of annotations is more flexible and powerful. In HebrewNet, a constituent of an annotated sentence may be associated with any number of grammatical constructions and semantic frames.

Perhaps the most significant difference between the two systems is that HebrewNet uses a grammatical model based on *constructions*, rather than FrameNet's (universal/global) syntactic relations. Grammatical annotation in FrameNet involves assigning PTs and GFs to sentence constituents. In HebrewNet, the process is more complex: before constituents can be labelled, the entire sentence or phrase must be assigned one or more CTs. A constituent may then be assigned a CR from one (or more) of these CTs. Constituents are also given their own CT label.

For example, in 2 Samuel 10:3 (fig. 8.4) the expression הִקְרָה אֶת־הָעִיר "to explore the city," annotated for the target [EXPLORE].הִקְרָה, is assigned the schematic CT 'Transitive Infinitive Predication.' This CT only has two constituent CRs, namely, Infinitive and Object; and in this case, they are assigned to הִקְרָה and אֶת־הָעִיר, respectively. These two constituents also have their own CTs: Infinitive Construct

²¹ See chapter 10.

Verb and *'et* Phrase; and semantically, they are associated with the FEs *EXPLORATION* and *AREA*, respectively. However, there is another expression in the near context which expresses the core *EXPLORER* FE: אֶת־עַבְדָּיו “his servants.” This is given a CT (again, *'et* Phrase) and associated with *EXPLORER*, but is not given a CR. Finally, the part-word רָגַל “spy out” is annotated with the ‘Compatibility’ paradigmatic relation.

3.3. *Further features and limitations*

Two other features warrant mentioning. First, in BH, as in many languages, a Finite Verb need not always be accompanied by an independent subject-like constituent; the Verb morphology is sufficient to index the contextually-salient referent. I have therefore added a category of instantiation called ‘Morphology Instantiation,’ which is often used when the annotation target is a Finite Verb: as well as an ordinary constituent for the Verb, an extra ‘Morphology’ constituent is created, linked to the Verb and also marked for Person, Number, and Gender. Such constituents are given the special CT ‘Verb Inflection,’ and are typically associated with agent-like FEs.²²

Secondly, HebrewNet allows not only frame-to-frame relations, but also specific annotation-to-frame relations. These are used as a simple way of indicating unusual semantic connections, such as creative or novel metaphors. I have added an ‘Evokes’ relation type for this purpose. Moreover, I have paid more attention to conventional or entrenched metaphoric connections in the BH lexicon. These are indicated either by frame-to-frame ‘Extension’ relations, which pertain to pervasive metaphor mappings, or more specific LU-to-frame ‘Evokes’ relations.

There are currently many limitations to HebrewNet. For instance, the system of defining construction types is fairly rudimentary; ideally, a sophisticated hierarchy or network is needed.

²² Note that Morphology Instantiation is *not* a type of ‘null’ instantiation: cf. J. Hoftijzer’s comments regarding classical Arabic Verbs (Hoftijzer 1965, 3).

CHAPTER NINE

A COGNITIVE ANALYSIS OF EXPLORING, SEARCHING, AND SEEKING

In this chapter and the next, I will seek to apply the theoretical framework and methods outlined thus far with respect to a particular semantic area: terms in BH for “exploring” and “searching,” particularly the words related to the triradical חקר—namely, the Verbs חָקַר (*qal*), נִחַר (nīp’al), and חִקֵּר (*pi’el*), and the Nouns חֶקֶר and מְחָקֵר.¹ We will begin with a cognitive analysis of a group of related concepts, typically expressed in English by words like “explore,” “search,” and “seek.” The categories and structures that will emerge from this analysis have, I believe, a reasonable amount of explanatory power and cross-linguistic applicability.

There are a number of reasons for choosing חקר and the conceptual frames into which it taps. First, it is mostly a relational term symbolising an activity, which makes it well suited to a FrameNet-style semantic treatment. Second, it is discussed, from a cognitive perspective, in several essays in Ellen van Wolde’s edited volume on *Job 28* (van Wolde 2003c), which thus provides us with some excellent some conversation partners.² Third, we will see that it participates in a rich and complex network of metaphoric and metonymic extensions.

In fact, the complexity of this network of extensions poses some problems for defining the limits of this study. The notion of searching or exploring an area is highly amenable to metaphoric extension in languages; BH is no exception. A detailed analysis of חקר quickly opens up many potential semantic fields. I have chosen to focus first on חקר and other words that can connote searching or exploring a physical area, and secondly on terms for the related idea of seeking an entity within a physical area (notably, בִּקֵּשׁ and דָּרַשׁ). I will explore these with respect to (1) the range of frames evoked by these terms, along with their internal structures; (2) the relationships between

¹ Matitiah Tsevat calls מְחָקֵר an “invented form” (*TDOT* V.148).

² Apart from a few essays in van Wolde’s volume and the standard lexica and theological dictionaries, I am not aware of any other dedicated semantic studies of חקר or related terms.

these frames, including metaphoric and metonymic mappings; and (3) the valence descriptions of חקר in particular.

For the most part, I have resisted the urge to follow the trail of frames further than this. For example, חקר is commonly used in an abstract sense relating to cognitive investigation, and so the frame [INVESTIGATE] will be important. However, if we were then to consider all the concrete domains of experience which, have metaphoric extensions into the field of cognitive investigation, whether in BH or elsewhere, the number and range of frames would very quickly become unmanageable, at least for the kind of detailed analysis I have attempted.³ The focus of my analysis, then, is the prototypical experiential/concrete ideas of “exploring,” “searching,” and “seeking,” and their immediate figurative extensions.

A useful place to start our cognitive analysis of the fundamental concepts is with Pierre Van Hecke’s sketch of the cognitive domains that are roughly covered by the Verbs “search” and “explore” in English (Van Hecke 2003c, 146–53). He identifies three participants that typically feature in these domains: “1) a subject performing a search, 2) a space that is searched, and 3) an object which the subject hopes to find while performing the search” (148). For now, I will label these the SEARCHER, the AREA, and the SOUGHT ENTITY, respectively. In Langacker’s terms, “search/explore” terms profile the *relationship* between two or more of these participants; and the two focal participants in any given relationship are the trajector and the (primary) landmark.⁴

It is important to note that these participants are not necessarily physical ‘things.’ Even in figurative uses, however, the labels are appropriate, because the non-trajector participants are often *construed* in some way as a space/area (whether 2- or 3-dimensional), and a sought ‘thing.’ Consider the following examples:⁵

³ Of course, attempting to sketch out a broader range of frames would be perfectly feasible; see, for instance, Fortescue’s (2001, 28–31) analysis of “thinking” terms. However, the process of defining frames, FEs, and LUs, and annotating occurrences in the HB, adds considerably to the task.

⁴ See Langacker 1987a, 217–28 on trajectors and landmarks, and Langacker 1987a, 270 on the primary landmark in relational domains with more than two participants (i.e., more than one landmark).

⁵ (a)–(d) are taken from the FrameNet 1.3 data.

- (1) a. "I **searched** the whole town for you."
- b. That afternoon I meant to **search** the Bible for information, though I knew little of it.
- c. She knew he was **searching** his mind for a joke.
- d. Paula **searched** his eyes for an answer.
- e. I love **exploring** Hegel's philosophy.

Sentence (1a) is the prototypical concrete case: a bounded physical region as the AREA, and an object (in this case, a person) as the SOUGHT ENTITY. In (1b–d), the AREA is not a typical spatial region, nor is the SOUGHT ENTITY a physical thing, yet there is an underlying spatial aspect to their construal. The *Bible* is imagined as a container of discrete pieces of *information*; the *mind* is construed as a space containing ideas, some of which are amusing; and even a person's *eyes* are viewed as areas that can be closely scanned to find clues which may yield information about the person's thoughts. In each case, the AREA may or may not contain the SOUGHT ENTITY; but if it does, locating the SOUGHT ENTITY will be difficult, and so will require diligence and time for the SEARCHER. Example (1e) does not have a SOUGHT ENTITY; rather, *Hegel's philosophy* is construed as a vast and as yet unknown region, which the thinker may traverse in order to become better acquainted with its intricacies.

The BH חקר terms, like *search* and *explore* in English, evoke a basic physical concept: that of moving around a physical region in order to observe its contents or features. In both BH and English, and probably more generally,⁶ the most obvious and frequent metaphoric extension is from physical searching/exploring to various purely cognitive activities, such as investigating concepts or questions and trying to find out information. We could describe this broad metaphoric mapping as COGNITIVE INVESTIGATION IS MOVING AROUND AN AREA OBSERVING ITS CONTENTS—or to put it more succinctly, THINKING IS EXPLORING.⁷

Apart from terms like *search* and *explore*, another source of expressions for cognitive investigation is words for purposeful visual perception. For example, *investigate* is, in appropriate contexts, essen-

⁶ See n. 42 below.

⁷ Van Hecke (2003c) helpfully explores various other aspects of construing a search, based on the physical process of locating an object in a two- or three-dimensional space or body of matter; for example, the need sometimes to dig through solid matter to reach or obtain the goal. I will not repeat his insights here.

tially synonymous not only with *explore*, but also with *scrutinise*, *look at*, and *inspect*.⁸

We will return in due course to these kinds of metaphoric extension. First, however, I will investigate more closely the general cognitive structure of “searching” and “exploring,” focusing primarily on the domain of physical entities.

1. Foundational frames: [EXPLORE], [SEARCH], and [SEEK]

Van Hecke (2003c, 148–53) identifies three “relational profiles” (i.e., scenarios, or frames), which broadly cover the spectrum of “searching.” He labels these “TO EXPLORE,” “TO SEARCH,” and “TO SEARCH FOR”—though for the last of these, I prefer the Verb *to seek*.⁹ All three involve a purposeful, rational searcher as the typical trajector,¹⁰ but they differ with regard to the number and salience of their non-trajector participants. In [EXPLORE], the sole landmark is the AREA; in [SEARCH], the primary landmark is the AREA, but a SOUGHT ENTITY is included as a secondary (lower-salience) landmark; and in [SEEK], the SOUGHT ENTITY is the primary landmark, with the AREA as a secondary landmark.

This type of variation in profiling is well documented. Langacker’s example of *teach*, shown in example (2) (adapted from Langacker 1987a, 269–70), shows the extent to which a primary landmark can vary with a single LU.

- (2) a. LEARNER: Sally **teaches** [handicapped children].
- b. SUBJECT: Sally **teaches** [mathematics].
- c. INSTRUCTION-LEVEL: Sally **teaches** [third grade].
- d. INSTITUTIONAL-SETTING: Sally **teaches** [Sunday School].

The trajector-landmark structure for each of the three schematic frames related to SEARCHING, EXPLORING, and SEEKING is represented in figure 9.1.

⁸ The link between SEEING (physical perception) and KNOWING OR UNDERSTANDING has been explored in the literature; cf. Sweetser 1990, 23–48; Baker 1999; and Ibarretxe-Antuñano 2002.

⁹ I have listed his scenarios in reverse order.

¹⁰ At least, the trajector is *construed* as a purposeful, rational agent. This may involve creative imagery; for example, *His rear wheel spun on the loose stones, searching for grip* . . . (FrameNet 1.3, [SCRUTINY].search.v).

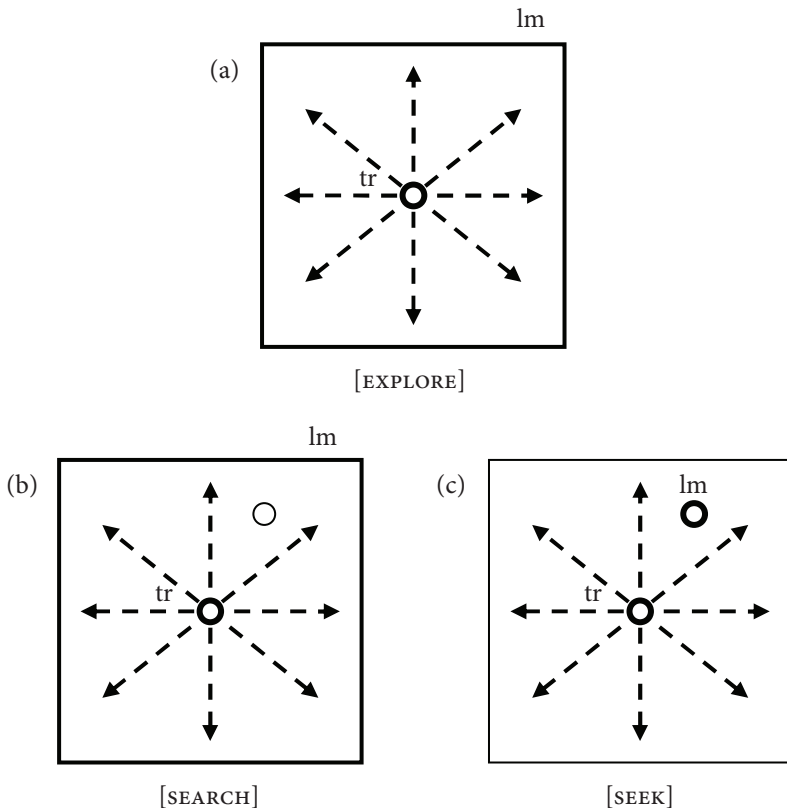


Figure 9.1 The trajectory-landmark (tr-lm) structure of [EXPLORE], [SEARCH], and [SEEK]. Adapted from figs. 1–3 in Van Hecke 2003c, 149–52.

In English, [EXPLORE] is typically evoked by Verbs such as *explore*, *scout (out)*, *spy (out)*, and possibly *search*; [SEARCH] may be evoked by *search*, *scour*, *comb*, and *explore*; and [SEEK] may be evoked by *seek*, *hunt*, *look (for)*, and *search (for)*. Typical expressions of these frames are given in examples (3), (4), and (5), respectively, with the major participants indicated.¹¹

- (3) a. For three days, [we]_{EXPLORER} **explored** [the countryside]_{AREA}.
 b. So the first thing [an owl]_{EXPLORER} will do when you release it is to **scout out** [the land]_{AREA}.

¹¹ All sentences except the first are taken or adapted from the FrameNet 1.3 data. Note that I have changed some of the labels for participants.

- (4) a. [Resident waterfowl]_{SEARCHER} can be seen **searching** [the increasingly barren landscape]_{AREA} [for food]_{SOUGHT ENTITY}.
 b. Much of the West End was sealed off today as [the police]_{SEARCHER} **combed** [the area]_{AREA} [for more bombs]_{SOUGHT ENTITY}.
 (5) a. [We]_{SEEKER} have had to **seek** [partners]_{SOUGHT ENTITY} [in the US and Western Europe]_{AREA} to overcome our technological and industrial limitations.
 b. [I]_{SEEKER} have unsuccessfully been **searching** [for a set of military rear bumpers]_{SOUGHT ENTITY}.

In BH, Van Hecke rightly observes that the Verb חָקַר typically evokes [EXPLORE] and [SEARCH] (i.e., figs. 9.1a and 9.1b), but not [SEEK] (fig. 9.1c). Other lexemes will have a different range, as we will see in chapter 10. The paradigmatic word for evoking [SEEK] is בִּקֵּשׁ.

Van Hecke's analysis is an excellent starting-point, and these three frames stand up to scrutiny; but some points need to be clarified and further nuanced. The following observations will pave the way.

1.1. *Comparing and relating the frames*

Broadly speaking, terms for “exploring,” “searching,” and “seeking” (and the underlying concepts) tend to be related to three schematic notions, namely, TRAVELLING IN AN AREA, INTENTIONAL PERCEPTION, and ATTEMPTING TO GAIN KNOWLEDGE. Various near-synonyms in the three foundational frames, and closely related frames, may only evoke one or two of these schematic notions; but all three are significant for analysing the relevant concepts.

The entire cluster of concepts is evident in Numbers 13:17–18:

- (6) Moses sent them to **spy out** (לְתוֹר) the land of Canaan, and he said to them, “**Go up** (עָלוּ) there into the Negeb and **go up** (וַעֲלִיתֶם) into the hill country, and **see** (וַיִּרְאִיתֶם) the land, what it is, and the people who dwell in it, **whether** (-הֲ) they are strong or feeble, **whether** (-הֲ) they are few or many.” (Num 13:17–18)

The general descriptor for the activity that the men are to undertake is תוֹר “spy out” (cf. vv. 2, 16), which is similar in meaning to חָקַר. In the subsequent detailed instructions, Moses specifies the direction of movement into and through a physical area (“go up there”), and commands close observation (“see”) of the land. This observation has

a purpose: to gain an understanding of the land and (more particularly) of the quality and quantity of its people.¹²

Although the English word *explore* strongly evokes the idea of TRAVELLING IN AN AREA, I suggest that in many contexts the other two related schematic concepts are more significant for identifying near-synonyms of words like *explore*, *search*, and *seek*—near-synonyms (in certain contexts) such as *examine*, *investigate*, *look (for)*, and *scrutinise*—and for understanding metaphoric and metonymic extensions.¹³ We will investigate these related schematic concepts more closely in due course.

Returning to the three foundational frames from figure 9.1, there are at least three issues which must be considered in comparing and contrasting them: (1) the purpose of the activity, (2) the set of salient participants (core FEs), and (3) the primary landmark. We will see that with respect to the first two issues, [SEARCH] and [SEEK] resemble one another, as against [EXPLORE], while with respect to the third, [SEARCH] and [EXPLORE] resemble one another, as against [SEEK].

Each of the three foundational frames pertains to an activity directed towards a *purpose*, at least implicitly. In [EXPLORE], the purpose tends to be broad and general; typically, it is to become familiar with the contents or significant features of the AREA. This connects exploration with gaining in-depth knowledge of a complex space or object; and in more abstract extensions of [EXPLORE], the purpose relates in some way to gaining understanding of a topic, person, or state of affairs. This is illustrated by the Psalmist's declaration in (7), in which "knowing" is the result of "exploring" a person.¹⁴

(7) יהוה חִקְרָתִי וַתֵּדַע:

yhwh ḥāqar-ta-nî

wat-t-ēdā'

yhwh explore-2MSG.PRF-1SG.OBJ CO.NARR-2MSG-know

"O YHWH, you have explored me and you know [me]." (Psalm 139:1)

¹² The idea of gaining knowledge is not independently lexicalised, but is implicit both in the Verb רָאָה "see" (cf. HALOT, s.v. רָאָה, sense 2) and in the הָ-marked indirect questions.

¹³ In fact, a number of these near-synonyms, which in present-day English evoke visual perception, originally developed from words for physical touching or manipulation (Sweetser 1990, 32). This metaphor (VISION IS PHYSICAL CONTACT OR MANIPULATION) is beyond the scope of the present study.

¹⁴ So Tsevat (TDOT V.149): "The outcome can be expressed by means of yāda'." The Verb יָדַע "know" here means gaining an understanding of something complex, rather than merely becoming aware of a fact. This will become significant shortly.

The expression of a purpose can be more complex, as in (6); but the broad notion of acquiring knowledge is still applicable. The same can be seen with terms more directly related to the concept of INTENTIONAL PERCEPTION:

- (8) ... who had assembled to **inspect** the field to see if it would be suitable as a venue for a steam rally.¹⁵

Both [SEARCH] and [SEEK] also involve a purpose; but the purpose is much more specific, namely, to locate or discover some SOUGHT ENTITY (if it exists) in the AREA. This is illustrated in (9):

- (9) וַיִּחְפֹּשׂ . . . וַיִּמְצֵא הַגִּבִּיעַ בְּאַמְתַּחַת בִּנְיָמִן:
wayē-ḥappēs . . . *way-y-im-māṣē'*
 CO.NARR.3MSG-**search**\INTS . . . CO.NARR-3MSG-MEDP-**find**
hag-gābīa' *bē-'amtah-at* *binyāmīn*
 ART-cup(MSG) LOC-sack-FSG|CNST Benjamin
 "And he **searched** . . . and the cup was **found** in Benjamin's sack." (Gen 44:12)

This brings us to the second difference between [SEEK]/[SEARCH] and [EXPLORE], in their respective sets of salient FEs. All three frames involve a searching/exploring agent (SEARCHER, or similar) and an AREA which is traversed, with some purpose in mind;¹⁶ but the particular purpose of [SEEK] and [SEARCH] means that these frames also include a preconceived SOUGHT ENTITY, which does not appear in [EXPLORE]. It is not that the SOUGHT ENTITY stands in place of a PURPOSE, but rather that the PURPOSE is specifically the discovery of a SOUGHT ENTITY. In terms of frame relations, then, [SEARCH] and [SEEK] are alternate perspectives on a non-perspectivised scenario, which I will label [SEEK SCENARIO], in which a SEEKER tries to find a SOUGHT ENTITY in an AREA. In both perspectives, the SEEKER/SEARCHER is the trajector; but they differ as to whether the AREA or the SOUGHT ENTITY is the primary landmark.¹⁷ In other words, [SEEK]

¹⁵ Lincolnshire Steam Engine Preservation Society, "History of the Lincolnshire Steam Engine Preservation Society," <http://web.ukonline.co.uk/lseps/history.html>.

¹⁶ Note that this purpose is not, strictly speaking, a *participant* in the frame(s), but rather a desired event or state of affairs arising from the profiled activity. Nevertheless, in FrameNet fashion, it will be included as an extra-thematic FE.

¹⁷ There are two other possible perspectives, in which the AREA and the SOUGHT ENTITY are the two focal participants, and the SEARCHER is less salient in conceptualisation. In English, this is typically expressed with a Passive construction; for example, *The entire city was searched for the escapees*, and, in the opposite configuration, *They*

terms primarily answer the question, what? whereas [SEARCH] terms primarily answer the question, where?¹⁸

This final issue—that of the primary landmark—results in a different grouping of the three frames. [EXPLORE], like [SEARCH], focuses on an AREA as the primary landmark. Thus, both [EXPLORE] and [SEARCH] essentially profile the purposeful scrutiny of an AREA. Indeed, [SEARCH] can be treated as a more specific (inherited) child frame of [EXPLORE]. As we will see in due course, this difference between [SEEK] and [SEARCH]/[EXPLORE] is particularly significant in metaphoric extensions of the physical concepts.

Thus, an initial scheme for relating the frames to one another results in figure 9.2 on page 202. The solid lines indicate a schematic-specific frame relationship (FrameNet’s “inheritance”), while the dotted lines indicate alternate perspectives. The outer rounded boxes represent frames, events, or states of affairs, while non-rounded boxes represent participants (entity-like FEs). The heavier boxes indicate focal participants (trajector and landmark). Thus, at the most general and schematic level, the three frames share the combined notions of active, intentional perception of some area. I have represented this with [SCRUTINY]; this will be justified in the following section. As the relations indicate, with respect to the main participants and purpose, [SEARCH] is similar to [SEEK]; with respect to profiling, [SEARCH] is similar to [EXPLORE].

1.2. [EXPLORE] vs. [SEARCH], and the specific/non-specific distinction

Despite this neat presentation, there are some cases in which it is not immediately obvious which frame is more appropriate.¹⁹ This is especially so with metaphoric extensions; but even with the prototypical physical uses, at times it is difficult to distinguish between [SEARCH] and [EXPLORE]. One reason for this is that [SEARCH] terms may read-

were finally **tracked down** in an accomplice’s basement. Indeed, I suggest that cross-linguistically, these perspectives probably tend to be dependent on constructional indicators, rather than being associated with particular LUs in their default construal.

¹⁸ I am indebted to David Shead (pers. comm.) for this way of expressing it.

¹⁹ Van Hecke rightly notes that the frames cannot always be clearly distinguished from one another, and suggests that “the transition from one model to another should be thought of as continuous rather than discrete” (Van Hecke 2003c, 152 n. 34). Nevertheless, one of my aims is to provide a certain degree of clarity with respect to the more difficult cases.

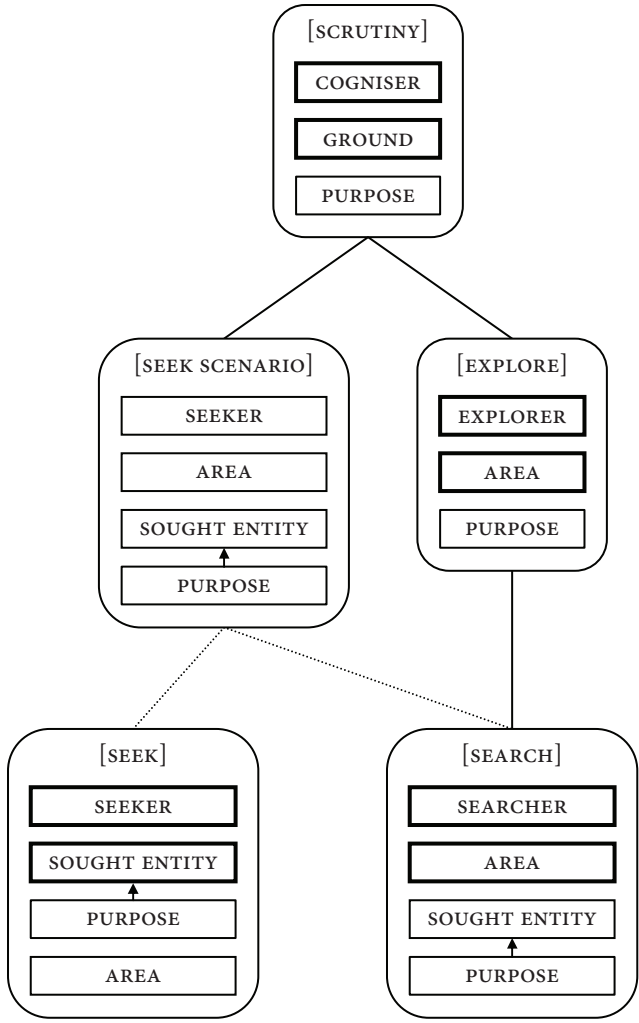


Figure 9.2 The basic relationships between [EXPLORE], [SEARCH], and [SEEK]

ily leave the SOUGHT ENTITY unexpressed, so that there may be some ambiguity over whether there *is* a search target.

A more subtle factor, however, is that in both [SEARCH] and [SEEK], the SOUGHT ENTITY may be either *specific* or *non-specific*; that is, it may refer to a specific entity (or set of entities) known to the speaker, or it may denote a referentially unspecified instance (or, in the plural, a number of instances) of a given class. Specific and non-

specific concepts are typically expressed, respectively, by definite and indefinite noun phrases—as illustrated by the following sentences:

- (10) a. I'm **looking** for *my pen*, but I can't find *it*.
 b. I'm **looking** for *a pen*, but I can't find *one*.

However, an indefinite expression can also have a specific referent. Thus, if the statement *I'm looking for a pen* is taken in isolation, the SOUGHT ENTITY can be either non-specific (“any pen”) or specific (“a particular pen”). This is the much-debated specific/non-specific ambiguity.²⁰ There are various diagnostic tests for identifying a specific reading. These involve adding an anaphoric reference to the SOUGHT ENTITY which coerces a specific sense; for example, a definite appositive phrase (*namely, my silver fountain pen*) or pronoun (*It's silver*), or a *wh*-interrogative (*Which one?*). Each of these is incongruous on the non-specific reading of *I'm looking for a pen*. Conversely, an anaphoric indefinite expression (*I found one*) can only be used if the SOUGHT ENTITY is non-specific.²¹

The BH Verb בָּקַשׁ “seek” is most frequently used in conjunction with a specific SOUGHT ENTITY (11a), but there are also non-specific examples (11b).

- (11) a. אֲבַקֶּשֶׁה אֶת שְׂאֵהָבָה נַפְשִׁי בְּקִשְׁתִּיו וְלֹא מִצְאֵתִי:
 'ă-baqš-â 'ēt še-'āhāb-â napš-î
 1sg-seek-hort acc rel-love-3fsg.prp soul(fsg)-1sg.poss
 biqqāš-tî-w wě-lō' mēšā-'tî-w
 seek\prf.ints-1sg-3msg.obj co-neg find-1sg.prp-3msg.obj
 “I will seek the one whom my soul loves. I sought him, but I did not find him.” (Song 3:2)

²⁰ Almog 1998a, 1998b; Abbott 2003, 2004; Forbes 2004. Joseph Almog (1998a, 57) distinguishes between “a specific *thing*” and “a specific *kind of thing*”; but instead of the standard ‘non-specific reading’ for the latter, he uses the cumbersome term “the *how-many-of-a-specific-kind reading*.” While Almog is right to observe that the *kind* is specific, the *instance* is not.

²¹ Waltke and O'Connor (IBHS §13) discuss specificity vs. definiteness, including specific indefinites such as אֶת אִשָּׁה אֲחָת “a jar” (Exod 16:33) and אִשָּׁה אֲחָת “a certain woman” (Judg 9:53). For completeness, it should be noted that, at least according to some, a definite expression can also have a non-specific reading (e.g., *The winner of the race will receive a handsome prize*). Although the relationship between definiteness and specificity is generally fairly clear, generic NPs (e.g., *The computer is a marvellous invention*, or *Computers are invaluable*) are more complex, and there is disagreement over whether the notions of definiteness and specificity apply at all (cf. Lambrecht 1994, 79–82; Taylor 1996, 184–86; Huddleston 1988, 90–92).

b. **יֹדַע מִנְּגֵן בְּכָנּוּר יְבַקֵּשׁ לְפָנָיו אֲדֹנָי אֲבָדָה-עָלָה**

yō-'mar=nā'	'ādōn-ēnū	'ābād-ê-kā
3MSG-say\JUSS=FRM	lord-1PL.POSS	servant-MPL CNST-2MSG.POSS
lēpānê-kā	yě-baqš-û	'iš
before-2MSG.POSS	3MPL-seek\JUSS.INTS-3MPL	man
yōdēa'	mě-naggēn	b-ak-kinnôr
know\PART(MSG)	PART-play\INTS(MSG)	LOC-ART-lyre

“Let our lord instruct your servants before you to seek a man who knows how to play the lyre.” (1 Sam 16:16)

In general, a specific SOUGHT ENTITY is presumed to exist, or at least construed as existing, though not necessarily to be located within the AREA.²² No such presumption or construal is necessary for a non-specific SOUGHT ENTITY. Thus, the difference between (12a) and (12b) is that in (12a) it is taken for granted—perhaps on the basis of independent evidence or insight, or perhaps simply for some rhetorical effect—that there exists a flaw in the argument, if only the speaker can locate it, whereas in (12b) the speaker may have no preconceptions about the argument’s lack of integrity.²³

- (12) a. I’m **looking** for *the flaw* in his argument.
 b. I’m **looking** for *a flaw* in his argument.

A succinct way of expressing this distinction is to say that, in [SEARCH] and [SEEK], a specific SOUGHT ENTITY reading relates to *location*, whereas a non-specific SOUGHT ENTITY reading relates to *existence*, and sometimes also to *quantification* (cf. Almog 1998a, 57).

We could conceivably represent this in our frame network by further splitting [SEARCH] and [SEEK], as in figure 9.3 (compare fig. 9.2 above). Recall that the solid lines indicate a schematic-specific frame inheritance, while the dotted lines indicate alternate perspectives. Thus, different frame networks are possible, depending on whether priority is given first to perspective (profiling) or to the specific/non-specific distinction.

Although the specific/non-specific distinction is significant, I have chosen not to split [SEARCH] and [SEEK] in this way in my frame network for BH terms; that is, I have retained the structure shown in

²² In fact, any referring expression is construed as existing; cf. Lyons 1995, 299.

²³ This is assuming a non-specific reading of *a flaw* in (b). It is possible to imagine a context in which it is specific, for instance, if the speaker has been told of a particular flaw and is trying to locate it.

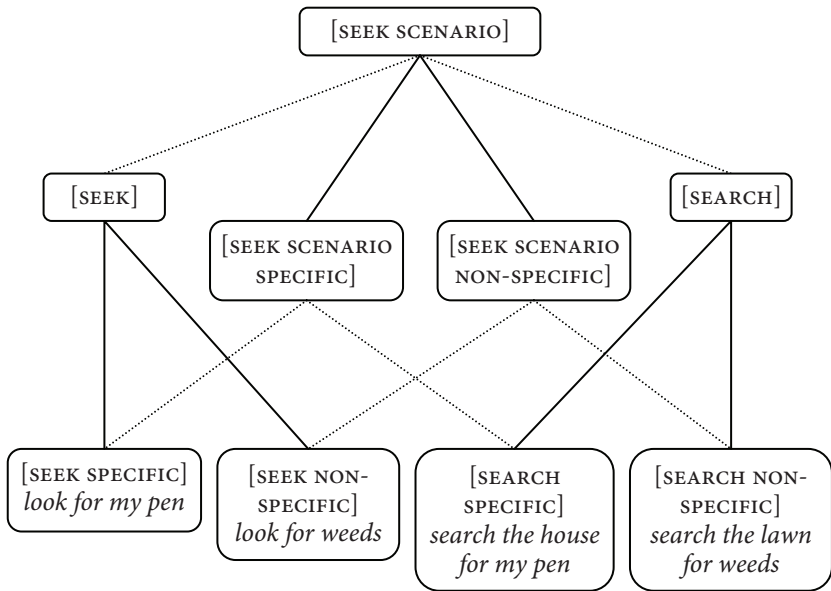


Figure 9.3 Specific and non-specific readings for [SEARCH] and [SEEK]

figure 9.2. The structure in figure 9.3 is arguably too fine-grained; furthermore, I suggest that the profiling/perspective difference between [SEARCH] and [SEEK] is pertinent to lexical categorisation more often than the specific/non-specific distinction, in that LUs tend to be more flexible with regard to the latter than the former.²⁴

These observations must be borne in mind when differentiating [SEARCH] and [EXPLORE]. Consider the following sentences, all of which express an AREA as the primary landmark:

- (13) a. The police **searched** several houses for the stolen painting.
 b. The police **searched** several houses for any leads.
 c. The police **searched** several houses.²⁵
 d. They spent many happy days **exploring** the forest behind the house.

In (13a), the purpose of the search is to locate a specific object, which is presumed to exist, though not necessarily in the AREA. In (13b), the

²⁴ Not all LUs are flexible with regard to specific and non-specific arguments; for instance, English *track* (as in *track an animal*) strongly favours a specific reading with a SOUGHT ENTITY primary landmark ([SEEK SPECIFIC] in fig. 9.3).

²⁵ This is taken from Van Hecke 2003c, 149.

SOUGHT ENTITY is non-specific, and the SEARCHERS have no preconceptions about whether there *are* any leads or clues for the relevant crime; but if there are, they aim to discover one or more of them. In (13c), the SOUGHT ENTITY is omitted by null instantiation. It is still a salient FE, but apart from any context, we are left with a specific/non-specific ambiguity.

Example (13d) differs from (13a–c) in that there is nothing the explorers particularly mean to find—neither a specific entity nor an unspecified instance of a type. The purpose is simply to acquire a detailed knowledge of the forest, which may include its contents, layout, features, and so on. Thus, although (13c) resembles (13d) in its form and in the FEs it instantiates, they belong in different frames.

Nevertheless, the distinction between [SEARCH] and [EXPLORE] may seem unclear when a non-specific SOUGHT ENTITY is involved—and even more so when it is left unexpressed. Moreover, the broader the *class* for which an instance is sought, the more [SEARCH] resembles [EXPLORE]; hence, *We explored/searched the attic looking for interesting things*. Thus, rather than a clear-cut boundary, it may be better to think of a transitional region between [EXPLORE] and [SEARCH]; and instances in this region may be difficult to place.²⁶

Based on these observations, we may clarify one section of Van Hecke's account. Although his diagrammatic representation of [EXPLORE], [SEARCH] and [SEEK] is very helpful,²⁷ his description of [SEARCH] is somewhat confusing. He explains this "relational profile" as "one in which the subject searches a certain area, not precisely knowing in advance what he or she can expect to find" (Van Hecke 2003c, 149).

This explanation is a red herring. Whether or not the subject knows in advance "what he or she can expect to find" is irrelevant.

²⁶ Cf. n. 19 above. This fuzzy boundary may be reflected in the FrameNet 1.3 frames [SCRUTINY] and its inherited child frame [SCRUTINIZING FOR]. Both focus on a COGNIZER, and a GROUND which is closely examined by the COGNIZER. Both also include a FE for a PHENOMENON within the GROUND (or belonging to the GROUND); but in [SCRUTINIZING FOR] the PHENOMENON is a core FE, and the COGNIZER specifically examines the GROUND "alert to the presence" of the PHENOMENON. In [SCRUTINY], the PHENOMENON need not be a salient participant, though the COGNIZER *may* be interested in a particular PHENOMENON of the GROUND. Nevertheless, there are some difficulties in FrameNet with the range of frames for searching, scrutinising, researching, inspecting, and so on.

²⁷ See fig. 9.1 on p. 197.

Even in a clear [SEEK] case, the subject may have no prior knowledge or expectation of what they might find—particularly with a non-specific SOUGHT ENTITY, but even with a specific one, as in (14).

- (14) I've got no idea whether Big Foot exists, but I'm going to **look** for *him* anyway.

The issue is not prior knowledge of the expected contents of the AREA; it is simply whether there is a preconceived entity, or a kind of entity, that the subject is *aiming* to locate or discover within the AREA.

Indeed, Van Hecke's illustrative sentence, which is reproduced in (13c) above (and suffers from the specific/non-specific ambiguity), has very little to do with his explanation.²⁸ *The police* may have a high expectation of finding incriminating evidence or clues, or some wanted item/person, in the *houses*. Nevertheless, it is the implied existence of a SOUGHT ENTITY that makes this a searching rather than an exploring event; and it is the fact that the primary landmark is the AREA that classifies it as a [SEARCH] rather than a [SEEK] perspective.

What neither the explanation nor the example shows is the possibility of a clearly-defined, specific SOUGHT ENTITY, with a high expectation of its existence in the AREA, but with a focus on the AREA as the primary landmark—as in (15).

- (15) I knew the book was there somewhere, but it took two hours of **searching** through *all the boxes*.

1.3. *The frames as subframes in complex events*

Thus far, we have considered processes of exploring, searching, and seeking somewhat in isolation from other events and states. However, because these are all purposeful activities, they are typically represented mentally as discrete subparts of various kinds of complex events—or, in FrameNet terms, as subframes in complex event frames. These are significant not only for further elaborating the differences between the foundational frames, but also for understanding the various figurative extensions.

By my reckoning, there are three main complex events which relate to [EXPLORE], [SEARCH], and [SEEK], each of which involves one or

²⁸ His subsequent examples of metaphoric uses (Van Hecke 2003c, 150) are not ambiguous: both require non-specific readings.

more of the foundational frames (as a process) and a subsequent event. The three secondary events are [COME TO KNOW GROUND], [BECOME AWARE OF], and [LOCATE].²⁹

The first two particularly relate to [EXPLORE]. By default, the purpose of a process of exploration is to come to a detailed knowledge of the internal features and contents of the AREA (or in [SCRUTINY], the GROUND). With חקר, this is not made explicit in any concrete, physical instances in the HB; however, we saw this complex event in an abstract use, in Psalm 139:1 (example [7] on page 199).

An exploration can also uncover some significant object or feature, which the EXPLORER was not specifically seeking, but which accords with the general aim of coming to know the AREA, or which is an instance of the sought type. Thus, while the *purpose* of exploration may be general, the *result* may be that the EXPLORER becomes aware of some significant PHENOMENON. I am not aware of any clear-cut examples of this in the HB, but it is easy to construct such a situation in English, as in (16).³⁰

(16) While we were **exploring** the attic, we **discovered** an ancient atlas.

The third complex event pertains to [SEEK SCENARIO]—that is, where the SEEKER has a preconceived search target. If the search is successful, the process terminates in an event of LOCATING the SOUGHT ENTITY. We can see this with both perspectives on [SEEK SCENARIO]: example (9) on page 200 illustrated the [SEARCH]→[LOCATE] complex event with חפש “search,” and the following (negated) example illustrates [SEEK]→[LOCATE] with בקש “seek”:

(17) וַיִּבְקְשׁוּ הָרֹדְפִים בְּכָל-הַדֶּרֶךְ וְלֹא מָצְאוּ:

wayē-baqš-û

hā-rōḏp-îm

CO.NARR.3MPL-**seek**-3MPL

ART-pursue\PART-MPL

bē-kol=had-derek

wē-lō'

māšā'-û

LOC-all\CNST=ART-road

CO-NEG

find-3MPL.PRF

“And the pursuers **sought** all along the road, but they did not **find** [them].” (Josh 2:22)

²⁹ The complex events would be labelled [COME TO KNOW GROUND PROCESS], etc., though these labels become unwieldy. FrameNet has no equivalent to my [COME TO KNOW GROUND], but my other two secondary subframes correspond to FrameNet’s [BECOMING AWARE] and [LOCATING].

³⁰ However, see below on Psalm 44:22[21]. Unexpected discovery events may be found in the HB; for instance, when Hilkiah the priest found (מָצָא) the Book of the Law (2 Chr 34:14).

In some cases, the distinction between a specific and non-specific SOUGHT ENTITY is again somewhat problematic. The discovery of a non-specific SOUGHT ENTITY seems to share aspects of both “locating” and “becoming aware of”: the broad search target is preconceived, but the specific entity found is not. Such instances may require case-by-case analysis; though I suggest that likely candidates for a [BECOME AWARE OF] subevent are those in which (i) the non-specific SOUGHT ENTITY type is very general, encompassing a range of specific categories, and/or (ii) the searcher has no particular expectation of finding any instances of the SOUGHT ENTITY type. Example (18) seems to be one such case.

- (18) When **looking for** something to make French onion soup in, I **came across** (and purchased) these.³¹

Psalm 44:22[21] is a difficult complex event case; for example, but it is not obvious which of [LOCATE] or [BECOME AWARE OF] is the more appropriate subframe. There are further complexities with *הִקְרָה* here, however, which we will examine in detail in chapter 10 (§2.7).

Thus, again focusing on concrete, physical uses, the frame network for our foundational frames can be represented as in figure 9.4 on page 210 (compare fig. 9.2 on page 202). The complex events have been indicated by joining consecutive subevents (i.e., subframes) with arrows. Moreover, the more schematic [SCRUTINY] can, like explore, participate in the first two complex event structures.

This diagram can be expanded further, as each of the terminal *events* in these complex processes leads in turn to a resultant *state*. In FrameNet terms, [BECOME AWARE OF] is the inchoative (i.e., inceptive) version of stative [AWARENESS], [COME TO KNOW GROUND] is inchoative of [KNOW GROUND], and [LOCATE] is inchoative of [KNOW LOCATION].³² Of course, these broader sequences are not always expressed in instances of [SEEK] terms. Nevertheless, the possible extended event sequences can be represented as in figure 9.5.

³¹ Internet discussion comment by Oakland Barb in “Unapologetic Tea Hound Looking for Very Large Mugs,” Chowhound, <http://www.chowhound.com/topics/363276> (accessed February 20, 2007; topic has since been removed). Note that *these*, in the sentence, refers cataphorically to a large mug (or set of mugs) advertised on an internet store.

³² I do not mean to suggest that all of these frames are lexicalised in any particular language. Even if there are lexical gaps, however, the logic of each frame can readily be expressed in any language.

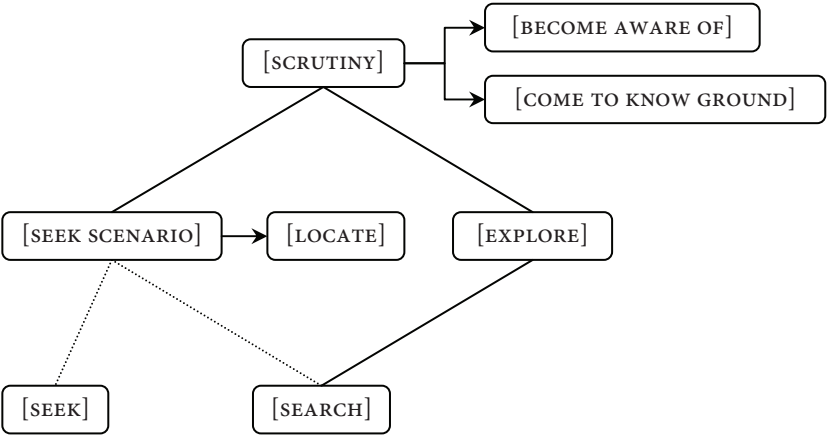


Figure 9.4 [EXPLORE], [SEARCH], and [SEEK] as subframes of complex events

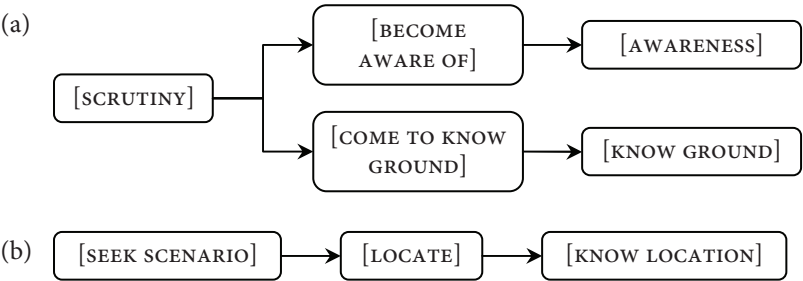


Figure 9.5 Extended complex events

2. Metaphoric extensions

While I have briefly touched on some of the likely metaphoric/metonymic extensions of searching/exploring terms, the focus thus far has been on more concrete, experiential uses. I believe this is a valid and helpful order of analysis, because there are several important and cross-linguistically recurring mappings which involve one of the foundational frames above as the source domain, and a more abstract domain involving human thinking or desiring as the target.³³

³³ Indeed, many of my frame labels and relations are taken from those in FrameNet—not because I have simply adopted their framework (in fact, in several places I

We will explore several groups of mappings, which begin with differing source domains. This will significantly expand our general cognitive frame network; and the entire system will later be refined for BH.

2.1. [EXPLORE]

To begin with, recall the three basic, schematic notions that are involved in exploring: TRAVELLING IN AN AREA, INTENTIONAL PERCEPTION, and ATTEMPTING TO GAIN KNOWLEDGE. It is in relation to the last of these that the major metaphor mappings extend from [EXPLORE]. In this section, I will describe two such mappings that are significant in BH.

Perhaps the most basic kind of knowledge is factual or intellectual knowledge; and in both English and BH, cognitive investigation of an abstract topic to gain factual knowledge can be construed as “exploring”—what I earlier called the THINKING IS EXPLORING metaphor.³⁴ In my frame structure, I use the [INVESTIGATE] frame for terms denoting this activity; the mapping itself is [EXPLORE]→[INVESTIGATE].³⁵

In fact, this mapping is built on a more fundamental metaphor or image, in which an abstract TOPIC is ‘imagined’ as a physical AREA. Once this image is established, then various further correlations may be drawn between what one does in an AREA and what one does men-

differ from FrameNet), but because this is one area of conceptualisation which is basic to human cognition and ‘imagining,’ and which thus has a considerable degree of cross-linguistic and cross-cultural validity.

Van Hecke follows the same order of analysis, based on the view that the abstract senses are dependent on the physical. However, he briefly raises (and rejects) the possibility that “the literal-figurative distinction in this case [is] the coincidental result of the application of the more or less abstract meaning ‘to investigate’ to both abstract and concrete contexts” (Van Hecke 2003c, 154). In fact, this is precisely the categorisation triangle. Moreover, while the diachronic dependence may be from physical to abstract and schematic, the development of a schematic concept may lead to a shift in the dependency relations, so that Van Hecke’s other possibility becomes a reality: “to explore a physical area” and “to explore an idea” are both specifications of the schematic notion “to explore [something].” The prevalence of non-physical search domains in the HB suggests that this may be the case with חקר.

³⁴ *Think* is a very broad term, and a lexical domain that is “subject to fine-grained lexical subdivision” (Fortescue 2001, 20). I use it here to mean “cognition,” that is, thinking about a topic over a period of time (cf. [COGITATION] in FrameNet).

³⁵ I use a solid arrow (→) between consecutive subframes in a complex event, and a dashed arrow (→) between the source and target domains in a figurative mapping.

tally with a TOPIC—the most important of which correlates EXPLORING with INVESTIGATING.³⁶

We will consider some examples shortly. However, if this mapping is prevalent cross-linguistically, we should expect to find a common conceptual structure which would motivate such metaphors. This is indeed the case; and the structure I propose, involving the three schematic notions mentioned above, is represented in figure 9.6.

Some of these frames require comment.³⁷ [SELF MOTION] consists of a MOVER, usually a living being, moving under its own power, either along a PATH or within an AREA.

The most basic frame for intentional mental activity is [COGITATION], which involves a COGNISER thinking about a TOPIC over a period of time. This may be divided into subcategories for ideas like “remembering,” “memorising,” “assessing,” and “worrying.” [INVESTIGATE] is one such subcategory, which relates to cogitation for the purpose of *understanding* of the topic in some way—either the topic as a whole or some aspect of the topic. The TOPIC may be a specific question or statement, or a broader idea or field of enquiry.³⁸

[PERCEPTION ACTIVE], as defined in FrameNet 1.3, contains words “whose perceivers intentionally direct their attention to some entity or phenomenon in order to have a perceptual experience.” The intentionality of this act differentiates [PERCEPTION ACTIVE] from [PERCEPTION EXPERIENCE], in which the perceiver is the passive experiencer of some stimulus. [SCRUTINY] is similar to [PERCEPTION ACTIVE], but here the perceiver is also a *cogniser*; that is, [SCRUTINY] also includes the idea of mental activity, in particular, that of seeking to gain knowledge of the ‘ground’—its characteristics and/or contents.³⁹

³⁶ Compare the mappings SUBJECTS ARE AREAS and RESEARCH IS EXPLORATION in George Lakoff’s conceptual metaphor database (“Conceptual Metaphor Home Page,” Univ. of California at Berkeley, <http://cogsci.berkeley.edu/lakoff/>).

³⁷ Most have corresponding frames in FrameNet. The closest parallel to my [INVESTIGATE] is possibly [RESEARCH]. The frame relations are fairly similar, except that FrameNet does not link any of these frames to [SELF MOTION], nor any other motion frame. FrameNet also lacks a frame corresponding to my [EXPLORE].

³⁸ In FrameNet’s [RESEARCH], this is split into two core FEs: a particular QUESTION, or an underspecified TOPIC; and these may fall into a broader FIELD of enquiry. However, the QUESTION/TOPIC distinction is not consistently applied in annotations.

³⁹ “This frame concerns a Cognizer (a person or other intelligent being) paying close attention to something . . . in order to discover and note its salient characteristics” (FrameNet 1.3, [SCRUTINY]). Words in [PERCEPTION ACTIVE] lack this purpose, as in *She gazed upon him fondly*, and *I sniffed solvents to blot out my problems*.

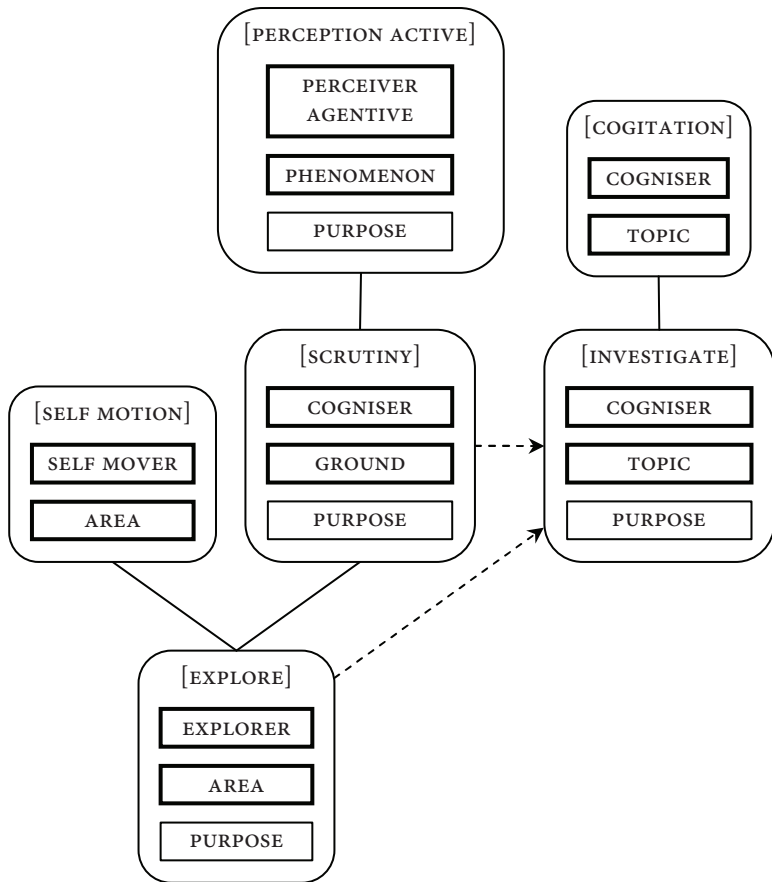


Figure 9.6 [EXPLORE]→[INVESTIGATE]

Here we might include, in the relevant senses, *scrutinise*, *examine*, *inspect*, and BH פָּקַד (1 Sam 14:17; Job 5:24), רָאָה (Gen 11:5; Num 21:8; Lev 13:3, 5, 6, etc.; Song 1:6; 3:11), and שָׁמַר (1 Sam 1:12; Zech 11:11; Job 39:1; Ps 59:10).

[EXPLORE] shares with [SCRUTINY] the notion of perceptual attention and seeking knowledge of the AREA, but adds to it the concept of moving around the AREA—that is, [SELF MOTION].

The focal frame, in this study, for figurative extension of “exploring” is [INVESTIGATE]. Fortescue (2001) argues that THINKING is a basic category in many languages; thus, it is common to find terms

for THINKING that do not have a more concrete, non-mental metaphoric source.⁴⁰

However, words from both [SCRUTINY] and [EXPLORE] are amenable to use with non-physical objects/areas. These are still *construed*, more or less, as objects/areas, and the action is construed as actively viewing the object or traversing and inspecting the area; but the target domain is that of cogitation on an abstract topic for gaining an in-depth understanding of it. In the diagram, this metaphoric extension is represented by a dashed arrow.

The [EXPLORE]→[INVESTIGATE] mapping in the diagram is a simplification on at least two counts. First, [INVESTIGATE] contains some LUs that are connected figuratively to [EXPLORE] (by imagining the TOPIC as an area), and others that are not. It would therefore be valid to distinguish [EXPLORE TOPIC] from the ‘basic’ category [INVESTIGATE], and metaphor mapping would be [EXPLORE]→[EXPLORE TOPIC]. Secondly, in terms of the categorisation triangle (page 158), [EXPLORE] and [EXPLORE TOPIC] would both specify a more schematic abstraction, which might be called [EXPLORE SCHEMA]. In a FrameNet-style analysis, however, such fine-grained splitting would be difficult to manage.

In my own system, I have omitted [EXPLORE SCHEMA], so that [INVESTIGATE] includes basic terms as well as those extended from other domains. Nevertheless, my software allows me to create a metaphoric link from [EXPLORE] to a *particular LU* within [INVESTIGATE], such as חִקֵּר. This deals with the first simplification above, without creating extra frames.

The [EXPLORE]→[INVESTIGATE] mapping in English is exemplified by our first *explore* example (1e), repeated in (19a).

- (19) a. I love **exploring** Hegel’s philosophy.
 b. *I love **walking around in** Hegel’s philosophy.
 c. *I love **eyeing** Hegel’s philosophy.
 d. I love **thinking about** Hegel’s philosophy.

⁴⁰ “A rather common situation among the languages of my sample is that a given language has a single, synchronically opaque, basic word for general mental activity, like English *think* . . .” (Fortescue 2001, 30). A possible example in BH is חָשַׁב “consider, respect, believe, plan”: although it derives historically from “weave,” this sense is not found in the HB, and may not be synchronically active. בִּין “understand” probably extends from “look at” (e.g., 1 Kgs 3:21; Ps 37:10; Job 9:11; Prov 7:7), though it derives etymologically from “interval, space between” (בֵּין; cf. TDOT II.99–100).

Of the potential synonyms in (19b–d), the more directly cognitive *thinking about* is acceptable, and captures the sense of the original—though with a far more subtle expression of the container image schema in the Preposition *about*. Neither *walking around in* nor *eyeing* easily carries the connotation of attempting to understand concepts. The main difference between (19a) and (19d) is the more obvious construal of *Hegel's philosophy* as an AREA in the former.

The pervasiveness of the [EXPLORE]→[INVESTIGATE] mapping is illustrated by the typical generic objects of *investigate* in English, which derive from terms for a physical region or location: one can investigate an abstract *topic* (< Greek τόπος), a *field*, or an *area*.

An analogous metaphor is evident in BH with חקר in Job 5:27, where the TOPIC/AREA is a series of apparent truths, pronounced by Eliphaz, concerning the moral regularity of life and the many blessings that will come Job's way if he seeks God (v. 8) and accepts his discipline (v. 17). He concludes:

- (20) הִנֵּה-זֹאת חִקְרֶנִּיָּה בְּנִי-הִיא שְׁמִעָנָה וְאַתָּה דַּע-לִי:
 hinnēh=zō't ḥāqar-nû-hā ken=hî'
 EXCL=PROX.FSG explore-1PL.PRF-3FSG.OBJ ANA=3FSG.DIST
 šēmā'-enn-ā wě-'attā da'=l-āk
 hear\IMP.MSG-CLT-3FSG.OBJ CO-2MSG.SBJ know\IMP.MSG=DAT-2MSG
 "See this! we have **explored** it; it is thus.⁴¹ Hear it, and know it for yourself!" (Job 5:27)

Once again, בִּין "consider" would be an acceptable alternative (cf. Ps 5:1; 119:95), but הִתְהַלֵּךְ "walk about" would not.⁴² Similar abstract uses are found for תֹּר "reconnoitre" (Eccl 1:13; 2:3).

Although it is beyond the scope of this study, the [SCRUTINY]→[INVESTIGATE] metaphor is even more obvious; in English one can *examine*, *scrutinise*, or *closely inspect* arguments or ideas.⁴³ The same

⁴¹ Or, *it is true*.

⁴² While a thorough typological study would require further work, I am aware of similar [EXPLORE]→[INVESTIGATE] mappings in Spanish (*explorar* "explore"), German (*erforschen* "explore"), Slovene (*preiskati/preiskovati* "search thoroughly"), Mandarin (*tàn* "explore," along with several compounds which may specify either a physical or an abstract sense), and New Testament Greek (ἐρυνάω "search" [e.g., 1 Pet 1:11; John 7:52]; cf. the older form ἐρευνάω in 2 Kgs 10:23). There is variety in the nuances of such metaphors, and in due course we will differentiate some of these in BH; but the broad pattern is clear.

⁴³ This mapping fits with Fortescue's THINKING IS OBSERVING metaphor (Fortescue 2001, 29).

is true with BH הִתְבּוֹנֵן (*hitpōlēl* of בִּין) “direct one’s attention,” as a comparison of the following examples illustrates:

- (21) a. וְעוֹד מַעַט וְאִין רָשָׁע וְהִתְבּוֹנֵנָה עַל־מְקוֹמוֹ וְאִינֶנּוּ:
wě-’ōd mē’aṭ wě-’ēn rāšā’ wě-hit-bōnan
 CO-SER little CO-NEG.EXIST wicked CO-REFL-pay.attention
-tā ‘al=mēqôm-ô wě-’ēn-ennû
 -2MSG.PRFX SUPS=place-3MSG.POSS CO-NEG.EXIST-3MSG
 “And in just a little while, the wicked will be no more; and you will **look carefully** on his place, but he will not be there.” (Ps 37:10)
- b. כִּי עָבְרוּ אֵי כְתִיִּים וְרָאוּ וְקִדְרָה שְׁלָחוּ וְהִתְבּוֹנְנוּ מֵאֵד וְרָאוּ הֵן הִתְהַבֵּרָה כְּזֹאת:
kī ‘ibr-û ‘iyy-ê kittiyyîm û-rě’
 SUBR go.across\IMP-MPL coast-MPL|CNST Kittim CO-see\IMP
-û wě-qēdār šilh-û wě-hit-bōnēn-û
 -MPL CO-Kedar send\IMP-MPL CO-REFL-examine\IMP-MPL
mē’ōd û-rě’-û hēn hāyt-â kâ-zō’t
 much CO-see\IMP-MPL EXCL be-3FSG.PRFX EQT-PROX.FSG
 “For go across to the coasts of Kittim and see, and send to Kedar and **examine** carefully, and see if there has been anything like this!” (Jer 2:10)

(21b) is followed by a question, which is the topic of examination or inspection: “Has a nation ever changed its gods . . . ?” (v. 11). Moreover, a similar extended meaning is evident here for רָאָה “see.”

Although [EXPLORE]→[INVESTIGATE] is a particularly important mapping, it is not the only one. חָקַר is used figuratively with a wide range of TOPICS/AREAS, including people (1 Sam 20:12), their attitudes (Judg 5:16) and behaviour (Lam 3:40), YHWH’s greatness (Ps 145:3) and his deeds (Job 5:9), wisdom (Job 28:27), words (Job 32:11), and even (the taste of) wine (Prov 23:30). Of these, by far the most important group concerns those in which a *person* is construed as an AREA, and the person or some attribute of the person is “explored.” In these cases, the intended knowledge is knowledge of a *person*, which is more than merely intellectual/factual. The target frame for this mapping I have labelled [EXAMINE PERSON]; and once again, there are mappings (in English and BH) from both [SCRUTINY] and [EXPLORE] to [EXAMINE PERSON]. Example (7) on page 199 illustrates the mapping [EXPLORE]→[EXAMINE PERSON], and [SCRUTINY]→[EXAMINE PERSON] is shown with הִבִּיט (*hip’il* of נָבַט) “look, look at” in the following example:

(22) בִּפְקֻדֵי אֲשִׁיחָהּ וְאִבְיָטָהּ אֶרְחָתֶיךָ:

bě-piqqud-ê-kā

'ā-sîh-â

LOC-instruction-MPL-2MSG.POSS 1SG-meditate-HORT

wě-'a-bbîṭ-â

'ôrḥ-ôṭ-ê-kā

CO-1SG-look.at\CAUS-HORT way-FPL-PL-2MSG.POSS

"I will meditate on your instructions and **look intently at** your ways"

(Ps 119:15)

Finally, both of the complex events we saw for [EXPLORE] and [SCRUTINY] in the previous section easily extend to both the [INVESTIGATE] and [EXAMINE PERSON] figurative uses—which further supports the overall cognitive metaphor structure.

Consider the resultant event [COME TO KNOW GROUND]: just as "exploring" often has the general purpose of coming to know the (physical) AREA as a whole, and "scrutinising" that of coming to know the GROUND, cognitive investigation may have the general purpose of coming to know or grasp the TOPIC as a whole. The English word *know* is rather too broad a label for this, since the purpose is not simply the acquisition of a discrete fact, but the in-depth understanding of a complex abstract structure—of its workings, significance, characteristics, or meaning. Thus, [COME TO UNDERSTAND] is more suitable.⁴⁴ This is evident in example (20) above, where Eliphaz's "exploring" of various moral and theological issues leads him to declare that "it is thus," and that Job also can "know" these universal truths. Similarly, "exploring" or "examining" a person (or their attitude, ways, etc.) is for the purpose of coming to a greater knowledge of them. Again, we saw this with חָקַר in example (7) on page 199. "Knowing" a person, however, is a rich concept, and warrants a separate [COME TO KNOW PERSON] frame for this resultant event.

The [BECOME AWARE OF] event is also applicable to figurative uses. A mental investigation of an abstract topic, and an examination of a person, may reveal pertinent facts that were not specifically the initial object of study. The [EXAMINE PERSON]→[BECOME AWARE OF] process is evident with the metonymic use of חָקַר in Psalm 44:22[21].

The frame network for these metaphoric extensions is depicted in figure 9.7 on page 218.

⁴⁴ This is similar to FrameNet's [GRASP]; however, at time of writing this frame was used for both stative and inceptive senses. In my framework, inceptive uses belong in [COME TO UNDERSTAND].

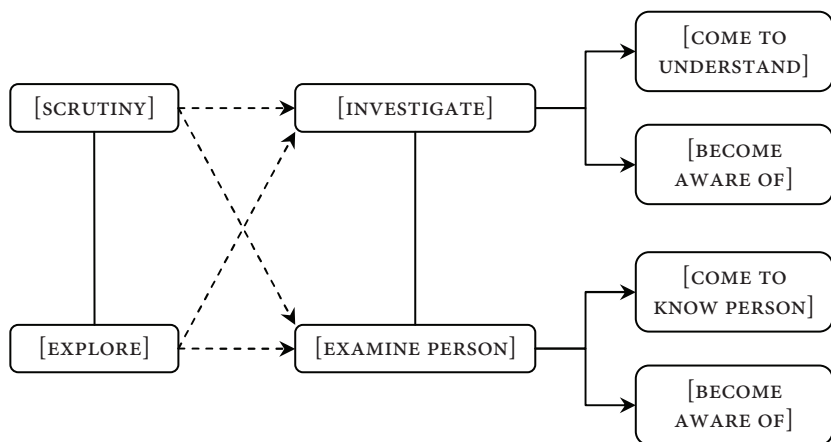


Figure 9.7 Extensions of [EXPLORE] and [SCRUTINY]: frames and complex events

Of course, these *event* frames initiate ongoing *states* of understanding or awareness, which can be represented by frames such as [UNDERSTANDING], [AWARENESS], and [KNOWLEDGE PERSONAL]. The difference between the inceptive and stative frames is apparent, for instance, in the senses of יָדַע , as Muraoka affirms: “The meaning of the basic Hebrew cognitive verb, יָדַע , has two dimensions: stative and fientive, ‘to know already, be aware, as a result of having learned, investigated’ vs. ‘to get to know, learn, find out’” (Muraoka 2003, 99).⁴⁵

Before we move on, Van Hecke proposes one further complexity to the entire conceptual structure, both for physical exploring and for the THINKING IS EXPLORING metaphor. He remarks that

exploring typically consists of two different, though closely related activities. On the one hand, exploring implies determining the content of a searched area, but, on the other hand, it also implies determining the extent or the expanse of the searched area. It is only by ascertaining the

⁴⁵ I have drawn a link between EXPLORING and UNDERSTANDING, but other experiential domains can similarly be extended to UNDERSTANDING. One of the most important is SEEING (experiential perception), and the link between this and KNOWING or UNDERSTANDING has been explored in the literature: e.g., Sweetser 1990, 23–48; Baker 1999; Ibarretxe-Antuñano 2002. Baker takes a frame-semantic approach to the highly polysemous word *see*, and to some extent uses Construction Grammar notation (more so than FrameNet); however, his approach uses a very fine-grained system of frames, to the extent that each LU is essentially assigned its own frame.

outer borders of an area that one can be sure of having explored the full extent of the area and being acquainted with its full contents. (Van Hecke 2003c, 153)

The last sentence is correct, and in due course we will see that terms like חקר may be modified by expressions of extent, or imply the idea of extent.⁴⁶ That is, EXTENT is a significant, though peripheral, FE in [EXPLORE].

However, “explore an area fully” and “determine the extent/boundary of an area” are quite different activities (as Van Hecke notes)—even if the former does implicitly result, almost accidentally, in an awareness of the boundary or extent of the area. In *explore an area fully*, the Verb still profiles the act of examining the contents of the area, and *not* of determining the area’s boundary. Both are intentional activities, but have different intents.

This is true for both concrete and figurative uses. Certainly, it is possible to “determine the extent of” a problem or issue, and this is *related* to the THINKING IS EXPLORING metaphor. The relationship stems, however, from the more fundamental image A TOPIC IS AN AREA. As I remarked above, this image allows further correlations between physical activities with respect to an AREA, and mental ones with respect to a TOPIC. Thus, a TOPIC may be “explored” to discover its internal features or contents, or its “limits” or “extent” may be sought—which usually relates either to realising how much work the task of investigation will require, or to identifying questions or difficulties which may be discounted as irrelevant. Again, these are different activities.

Furthermore, while Van Hecke rightly connects the idea “to explore an area” and “to know to its full extent,” this connection is *not* dependent on the intermediate notion “to determine extent” (*contra* Van Hecke 2003c, 155–57). As we have seen, both “exploration” and “investigation” are for the purpose of gaining knowledge or understanding; and an *extensive* exploration/investigation may lead to *extensive* understanding. Nowhere in this is the act of *determining* extent profiled.

This casts doubt on Van Hecke’s claim that *exploring* itself “typically consists of” both activities. That does not preclude the possibility that the same lexeme might be used, in a given language, for both

⁴⁶ E.g. Job 28:3; Eccl 1:13; and כל “all” in Gen 31:34; Josh 2:22; 1 Kgs 1:3.

concepts; but this involves a significant polysemy (or, diachronically, a semantic shift). In English, at least, neither *search* nor *explore* can be used (either physically or figuratively) to mean “determine the extent of”;⁴⁷ and in my view, neither can חקר.

2.2. [SEEK SCENARIO]

The close relationship between [EXPLORE] and [SEARCH]/[SEEK] in their concrete senses is paralleled by metaphoric use, particularly in the domain of mental enquiry and the gaining of knowledge. However, whereas [EXPLORE]→[INVESTIGATE] construes the desired knowledge content as an AREA, and aims to come to an understanding of its “contents,” extensions of [SEARCH]/[SEEK] into the domain of knowledge construe the desired content as a discrete, hidden entity, possibly in some broader knowledge AREA. The activity of the COGNISER is then construed as “seeking” this piece of knowledge. More commonly, this SOUGHT CONTENT is the primary landmark; the main mapping is therefore [SEEK]→[SEEK TO KNOW]. However, the alternative profiling is also possible in English, so that the broader FIELD in which the cognitive search takes place is the primary landmark; thus, compare the following:

- (23) a. [SEEK TO KNOW]: She spent her life **searching for** the reason he left.
 b. [SEARCH FOR KNOWLEDGE]: I’m **searching** my mind for the answer.

In BH, a similar abstract use is found with בִּקֵּשׁ “seek” in Job 10:6, which imagines God’s judicial investigation of a person, “seeking” their iniquity, that is, aiming to find out whether there is any sin “within” the person:

- (24) כִּי־תִבְקֹשׁ לַעֲוֹנִי וְלַחַטָּאתַי תִּדְרֹשׁ:
kî=tě-baqqēš la-‘ăwōn-î
 SUBR=2MSG-**seek**\NPRF.INTS DAT-iniquity-1SG.POSS
û-lě-ḥattā‘t-î ti-drôš
 CO-DAT-sin\FSG-1SG.POSS 2MSG-inquire\NPRF
 “... that you should **seek** for my iniquity and inquire about my sin?”
 (Job 10:6)

⁴⁷ Neither of Van Hecke’s illustrative English sentences (p. 153) uses *explore*, *search*, or any near synonym. While the examples confirm that the relevant ideas are all in the same conceptual ball-park (so to speak), based on A TOPIC IS AN AREA, they by no means demonstrate that “determining extent” is a kind of “exploring.”

Furthermore, the entire [SEEK SCENARIO]→[LOCATE] event complex is schematised in this mapping, since learning the desired piece of knowledge is construed as “locating” it.⁴⁸ This process is illustrated in Ecclesiastes 8:17, where the desired knowledge is “the work that is done under the sun”:

- (25) ... then I saw all the work of God, that man is unable **to find out** (לִמְצוֹא) the work that is done under the sun. However much man toils **to seek** (לִבְקֹשׁ), he will not **find** (יִמְצֵא); and even if the wise one should claim **to know** (לִדְעַת), he is unable **to find out** (לִמְצוֹא). (Eccl. 8:17)

Of course, this is a very large piece of knowledge to “seek”! Indeed, the same content may be construed as an entity to be “sought” (from a distance), or an area to be “explored” (from within); and not surprisingly, these images are sometimes mixed together. Thus, in Proverbs 2, where the addressee (“my son,” v. 1) is exhorted to “seek” insight and understanding (v. 4), the speaker promises:

- (26) אֲזַ תֵּבִין יִרְאֵת יְהוָה וְדַעַת אֱלֹהִים תִּמְצֵא:
 'āz tā-bîn yir'-at yhwh
 TEMP.DIST 2MSG-**understand**\NPRF fear-FSG|CNST yhwh
 wē-da'-at 'ēlōhîm ti-mšā'
 CO-knowledge-FSG|CNST God 2MSG-**find**\NPRF
 “... then you will **understand** the fear of YHWH and **find** the knowledge of God.” (Prov 2:5)

Figure 9.8 shows the [SEEK SCENARIO] section of our frame network, extended to include the search for knowledge.

2.3. [SEEK]

The final group of metaphor mappings we will consider does not apply to [EXPLORE] or [SEARCH]; in each case, the source domain is [SEEK]. In fact, [SEEK] is more complex than [EXPLORE] in its figurative uses, and I will not attempt to cover the whole range. The mappings below, however, are particularly relevant to [SEEK] in BH, and pertain, broadly speaking, to volition. There are two related schematic mappings: [SEEK]→[ATTEMPT] and [SEEK]→[DESIRE].

Examples (27) and (28) illustrate [SEEK]→[ATTEMPT] in English and BH, respectively.⁴⁹

⁴⁸ Cf. English *find out*, German *herausfinden*, BH מְצֵא.

⁴⁹ Compare also French *chercher* “seek” and *chercher à* “strive to,” and Spanish

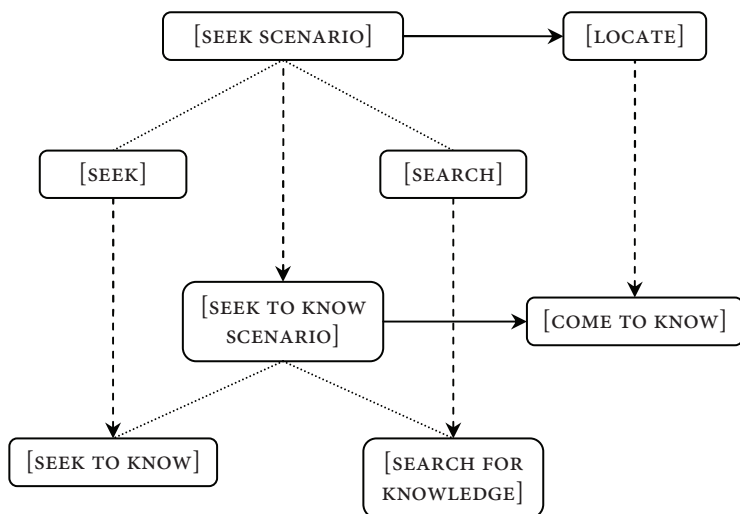


Figure 9.8 [SEEK SCENARIO]→[SEEK TO KNOW SCENARIO]: frames and complex events

- (27) a. He **sought** to climb Mount Everest.
 b. They **sought** his destruction.
 c. Libya **sought** nuclear weapons in the 1960s.

- (28) a. וַיִּבְקֹשׁ הַמִּיתוֹ:

wayē-baqqēš hā-mīt-ō
 CO.NARR.3MSG-**seek**\INTS CAUS-die\INF-3MSG.OBJ
 “and he **sought** to kill him” (Exod 4:24)

- b. אֶחָת | שְׁאֵלְתִי מֵאֵת־יְהוָה אוֹתָהּ אֲבַקֵּשׁ שְׁבִתִּי בְּבֵית־יְהוָה כָּל־יְמֵי חַיִּי
 'ahat šā'al-tī mē-'ēt=yhwh 'ôt-āh
 one ask-1SG.PRF ABL-with=yhwh ACC-3FSG
 'ā-baqqēš šibt-ī bē-bêt=yhwh
 1SG-**seek**\NPRF.INTS dwell\INF-1SG.POSS LOC-house\CNST=yhwh
 kol=yēm-ê hayy-ay
 all=day-MPL\CNST life-1SG.POSS
 “One thing I have asked from YHWH; I will **seek** it: my living [i.e., that I may live] in the house of YHWH all the days of my life . . .” (Ps 27:4)

buscar (e.g., *No sé qué **buscan** con esto*, “I don’t know what they’re **trying to achieve** with this”). A number of senses of ‘seek, v.’ in *OED* relate to the idea of attempting something: e.g., senses (7), (8), (11).

- c. עָשָׂה הָאֱלֹהִים אֶת־הָאָדָם יִשְׂרָאֵל וְהָמָּה בָקְשׁוּ חֲשָׁבוֹת רַבִּים :
 ‘āśā hā-’ēlōhīm ‘et=hā-’ādām yāśār
 make(3MSG.PRF) ART-God ACC=ART-man upright
 wě-hēmmā biqš-û hiššēbōn-ôt rabb-īm
 CO-3MPL.SBJ seek-3MPL.PRF scheme-FPL many-MPL⁵⁰
 “... God made mankind upright, but they **have sought** many
 schemes.” (Eccl 7:29)

The notion of “attempting” is very broad, and has a number of varieties that are amenable to [SEEK] terms in English and BH. An agent may “seek” to carry out an action, as in (27a) and (28a), “seek” (to bring about) an event or state, as in (27b) and (28b), or “seek” (to carry out some salient action on) some focal entity, as in (27c) and (28c).⁵¹ Indeed, one can “attempt” with respect to almost any action, event, or state of affairs.

It is not difficult to find a motivated account for this metaphoric mapping. [SEEK] has as its prototypical sense “strive to locate (an entity),” which can readily be schematised into “strive to carry out an action or bring about an event/state-of-affairs.”

Moreover, the act of “attempting” is based on the passive notion of “desiring”: if an agent is striving to do or effect something, they must *want* it in some way. That is, [ATTEMPT] inherits from [DESIRE]. It is also easy to see how the SOUGHT ENTITY in an act of “seeking” may come to represent the object of a person’s desire.

It is not surprising, then, to find instances of the [SEEK]→[DESIRE] mapping, though I would expect it to be less common.⁵² In (29), for instance, the team coach is not suggesting that *he* had attempted to bring about “a big effort”; rather, it is an expression of his desire that the team do so.

(29) I was **looking for** a big effort from the team.

⁵⁰ Though it results in an apparent gender mismatch, I have followed Anstey’s principle of glossing the plural morphemes *-ôt* and *-im* according to their “morphological Gender” (Anstey 2006a, 61).

⁵¹ FrameNet describes this in terms of acquiring a sought entity, but these are not the only possible actions (see below for my critique).

⁵² Slovene *iskati* and *poiskati* “seek” can be used in a volitional sense: “I am seeking your advice,” and even “I want a certain book” (David Shead, pers. comm.). Compare also Spanish *buscar* and German *suchen*. Interestingly, the BH idiom בָּקַשׁ רָעָה *“seek (someone’s) harm”* (discussed below), which I place in [ATTEMPT], has a [DESIRE] near-equivalent: חַפְצֵי רָעָתִי *“those who desire my harm”* (Ps 40:15[14]; 70:3[2]; cf. also דְּרָשֵׁי רָעָתִי *“those who are intent on my harm,”* Ps 38:13[12]).

In BH, בִּקֵּשׁ “seek” can also be used in the less active sense “desire.” Where the subject “seeks” something of another person, as in (30a), typical translations are “require” or “demand.” As with [ATTEMPT], the object of desiring may be an event (30a) or a state (30b).

- (30) a. מִי־בִקֵּשׁ זֹאת מִיָּדְכֶם רַמָּס חֲצָרִי:
 mī=bīqēš zō’t miy-yedk-em
 INT.HUM=seek\3MSG.INTS PROX.FSG ABL-hand(FSG)-2MPL.POSS
 rēmōs ḥāṣēr-ā-y
 trample\INF courtyard-MPL-1SG.POSS
 “Who **seeks** this from your hand—the trampling of my courtyards?”
 (Isa 1:12)
- b. גַּם־תִּמּוֹל גַּם־שְׁלֹשׁ הַיְּיָתִים מִבִּקְשִׁים אֶת־דָּוִד לְמֹלֵךְ עַלְיָכֶם:
 gam=tēmōl gam=šilšōm hēyī-tem
 ADD=yesterday ADD=three.days.ago be-2MPL.PRF
 mē-baqš-īm ’et=dāwīd lē-melek ’āl-ēkem
 INTS=seek\PART-MPL ACC=David DAT-king SUPS-2MPL
 “For some time you have been **seeking** David to be king over you.”
 (2 Sam 3:17)⁵³

However, it can be difficult to decide between [ATTEMPT] and [DE-SIRE]; and at least with בִּקֵּשׁ, [ATTEMPT] is more common.

Returning to the [SEEK]→[ATTEMPT] mapping, deciding on frames and frame relations is difficult, given the richness of the metaphor and the breadth of the [ATTEMPT] concept. In FrameNet, [ATTEMPT] is used for cases in which an AGENT tries to achieve a GOAL—which is, it seems, an action. [ATTEMPT] is inherited by the [SEEKING TO ACHIEVE] frame, in which “an Agent intends and takes steps towards bringing about a State_of_affairs or, metonymically, towards acquiring a Sought_entity.”

I am not convinced that the distinction between [ATTEMPT] and [SEEKING TO ACHIEVE] is well-founded, since the same metonymy also applies to [ATTEMPT]: an agent can “seek” a focal entity in some implied, contextually salient *action*. Indeed, “acquiring a Sought_entity” is an action goal, not a state of affairs. Similarly, I suggest that where an [ATTEMPT] LU like “seek” is used directly with a desired

⁵³ In (30b), it is not that the “elders of Israel” have been “seeking to locate” David; rather, they have desired to bring about the state “David for a king over you” (hence the Andersen-Forbes label “Object Complement” for בִּקְשִׁים אֶת־דָּוִד לְמֹלֵךְ עַלְיָכֶם). This is why Abner’s subsequent command is “So now, do [it]!” (וַעֲתָה עֲשֵׂה) (v. 18)—that is, “bring it about” (ESV).

state of affairs (e.g., *seek world peace*), the latter is used metonymically for the event of *bringing about* the state of affairs.

Furthermore, the term SOUGHT ENTITY is too restrictive, if this means “an entity the AGENT attempts to locate or acquire.” In some cases, “seek” words in [ATTEMPT] are used with an entity-like object; but the desired action to be carried out on this focal entity cannot be described as “locating” or “acquiring.” This is the case, for instance, with the BH idiomatic expressions *בִּקֵּשׁ נַפְשׁ* “seek (someone’s) life,” which usually means “strive to take away or end (someone’s) life” (e.g., Exod 4:19; 1 Sam 20:1),⁵⁴ and *בִּקֵּשׁ רָעָה* “seek (someone’s) harm,” which means “strive to bring about (someone’s) harm” (Num 35:23; 1 Sam 24:10; Ps 71:13, 24; Esth 9:2).

I have therefore simplified matters by broadening [ATTEMPT] to include all the situations described above. The variations are represented by three separate FEs: GOAL, STATE OR EVENT, and FOCAL ENTITY, the latter two metonymically representing the GOAL. The three form a coreness set.

As with the earlier extensions, we must also consider the complex events in which these frames and mappings participate. Although [DESIRE] may participate in a range of complex events (involving, e.g., [GETTING]), it readily stands as a self-contained frame. However, [ATTEMPT] intrinsically profiles a purposeful activity. In FrameNet, it is represented as a subframe of [ATTEMPTING SCENARIO], preceding [SUCCESS OR FAILURE].

This structure seems to parallel [SEEK]→[LOCATE]; and indeed, [SEEK] words can often be used in the [ATTEMPT] subframe of an [ATTEMPT]→[SUCCESS OR FAILURE] complex event. It turns out, however, that [LOCATE] words cannot be used as readily in the [SUCCESS OR FAILURE] subframe.⁵⁵ This is because [ATTEMPT] covers any kind of striving, nor merely striving to locate something; that is, [ATTEMPT] has a far broader meaning than [SEEK]. It is only when an the [ATTEMPT] event is construed as trying to locate some (abstract) entity or state that we should expect the entire [SEEK]→[LOCATE] process to allow figurative extension. The metonymic uses of [ATTEMPT]

⁵⁴ Proverbs 29:10 may be an exception, in which *יִבְקֹשׁוּ נַפְשׁוֹ* means “strive to preserve his life” (so, HCSB, NASB; *contra* ESV, NIV, NRSV; cf. NET n. 34). Even so, this is still a long way from “locating” or “acquiring.”

⁵⁵ For instance, in example (27a) on p. 222, an appropriate response would be *He succeeded*, but not *?He found it*.

with a FOCAL ENTITY or a STATE OR EVENT are, indeed, more amenable to such a construal. Thus, *she sought happiness* is readily followed by *and she found it*.

In fact, [SEEK TO KNOW] fits into this category: it not only further specifies the [SEEK]→[ATTEMPT] mapping, but construes the activity as striving to “locate” knowledge.

We can now add another set of mappings to our frame network, as shown in figure 9.9.

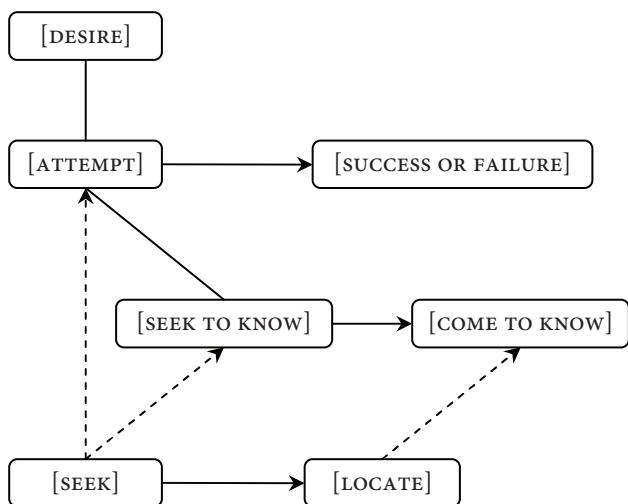


Figure 9.9 [SEEK]→[ATTEMPT]: frames and complex events

2.4. Locating instances

The frequency and richness of metaphoric language poses a problem for frame-based annotation; it is sometimes difficult to decide whether an instance should be listed in the source or the target frame.

In general, the target frame is more appropriate, since it is there that words in close paradigmatic relations with the target LU will be found. However, where the imagery is particularly vivid and ‘living,’ or where the metaphor is exploited by the author, the solution is less obvious.

For the moment, we will only consider one example: Proverbs 2:4. The verse follows an exhortation to “call out for discernment” and “raise your voice for understanding,” and it reads: “if you seek it like

silver and search for it like hidden treasures.” On the one hand, this fits with [ATTEMPT], and “it” (referring to “discernment” and “understanding”) stands metonymically for attaining these qualities. However, the simile is so evocative that it equally belongs in [SEEK]. Once again, the distinction is blurred.

Two options are available to us. If it is listed in one of the two frames, the annotation can be marked with an Evokes relation to the other frame. Alternatively, the occurrence could be listed in both frames. This requires case-by-case assessment.

3. *Temporal profiles, resultative senses, and metonymic shifts*

Having mapped out the complex frame network involved in the ideas “exploring,” “searching,” and “seeking,” we must address an extra complexity: such processes are construed as taking a length of time. Furthermore, in Langacker’s terms, the *temporal profile* of a word may include more or less of that total time, and may include start and/or end points—or occasionally even an event or state subsequent to the normal profile.⁵⁶

3.1. *Telic processes*

Some theoretical background will help at this point, with the notion of **telic** vs. **atelic** processes.⁵⁷ This distinction concerns whether an event that is seen as durative includes within its conceived time span a finishing point. Thus, a telic process “leads up to a well-defined terminal point, beyond which the process cannot continue” (Comrie 1976, 45); an atelic process has no such inbuilt terminal point.⁵⁸

⁵⁶ Recall that ‘profile’ refers to the concept symbolised by an expression, against the background of a broader ‘base.’ The base is also called the ‘scope of predication’ for the expression. Of course, ‘temporal profile’ and ‘temporal scope (of predication)’ focus on but one aspect of profile and scope. On these issues see e.g., Langacker 1987a, 118–19; 1987b, 56; 2000b, 6, 52; and cf. Evans and Green 2006, 538–44, as well as the account of *scope*, *attention*, and *salience* in Croft and Cruse 2004, 23, 46–54.

⁵⁷ The terminology was introduced by Howard Garey (1957). I noted earlier that [EXPLORE], [SEARCH] and [SEEK] represent purpose-directed activities; but as will be apparent, by ‘purpose-directed’ I mean something quite different from the technical term ‘telic.’

⁵⁸ ‘Durative’ contrasts with ‘punctual’ (Comrie 1976, 41–44). Thus, a telic process is a bounded, durative process (cf. Evans and Green 2006, 520–23).

Usually, the simplest way to identify whether a process is telic is to compare imperfective and perfective perspectives on that same process.⁵⁹ A perfective description of a telic process implies the attainment of the end, whereas an imperfective description excludes the end from its profile, since it focuses exclusively on the internal structure of the process. So then, for a *telic* process, the imperfective statement does not imply the perfective (the process could be interrupted prematurely); but the implication does hold for an *atelic* process.

Compare the following sentences:

- (31) a. Jane is sleeping.
 b. Jane has slept.
 c. The chair is falling over.
 d. The chair has fallen over.

The “sleep” process is atelic, since the imperfective sentence implies an equivalent perfective one: if Jane spends any amount of time sleeping (31a), then no matter when her sleep is interrupted, (31b) is true. That is, the process requires no final event or state for its completion. In contrast, the “fall over” process is telic: if the process of falling over in (31c) is interrupted—for instance, if I catch the chair—then (31d) is not true, since the perfective sense of the latter implies a state of affairs that completes the process. The difference between (31c) and (31d) should be understood as grammatical rather than lexical: it does not demonstrate separate senses of *fall over*, but is purely the difference between an imperfective and a perfective construal of a telic process (Garey 1957, 106–8).⁶⁰

⁵⁹ Note that the perfective/imperfective distinction is aspectual (*Aspekt*), whereas telic/atelic describes an inherent property of a process (*Aktionsart*) (Comrie 1976). Langacker begins his account of perfectivity/imperfectivity by describing processes themselves as perfective or imperfective (i.e., with *Aktionsart*), before considering aspectual distinctions (Langacker 1987b, 78–84; 1987a, 254–67; 1990, 87–93, 154; 1991, 549, 51; 2000b, 226–28, 48). This has merit, but would take us too far afield.

In what follows, the question of whether BH *grammaticalises* the perfective/imperfective distinction in its Verb forms is relatively unimportant, since even where aspect is not grammaticalised, aspectual distinctions are very often able to be “disambiguated by the context” (Payne 1997, 239).

⁶⁰ Garey summarises the point in this way: “An imperfective tense applied to a telic verb has the effect of hiding the arrival or nonarrival at the goal. . . . A perfective tense applied to a telic verb expresses the attainment of a goal. This creates the illusion that the achievement of the goal is part of the lexical meaning of such a verb” (Garey 1957, 108).

Comrie rightly points out that telicity is not a property of a verb *per se*, but rather of a “situation,” which is described by a verb together with its arguments (Comrie 1976, 45). Thus, (32a) is atelic, since no matter what John is playing nor when he stops, he *has played the piano*; yet (32b) is telic, since John *has played Mozart’s Clarinet Concerto* only when he has finished the piece.

- (32) a. John is playing the piano.
 b. John is playing Mozart’s Clarinet Concerto.

This example demonstrates the significance of FE profiling for interpreting a potentially telic utterance. In the case of [PLAY MUSIC], the choice of MUSIC or INSTRUMENT influences the aspectual flavour.

An important category associated with telic processes is the so-called **incremental theme**.⁶¹ In a telic process, there is a correspondence between the progress of the process denoted by the verb and one of the participants in the process. That is, the participant, or some attribute of the participant, is quantifiable and changing in quantity, and this change correlates with the progress of the process itself. Thus, there is a “**gradual** relation” between the process and the participant (Rothstein 2004, 33).⁶² In (32b), the work of music has a certain ‘length,’ however this is conceived, and clearly the event of *playing the concerto* proceeds as more of the work is completed. Sentence (31c) is more complex: the incremental theme is not the chair itself, but the path the chair takes as it changes from the upright to the horizontal position. If I catch it somewhere along this path, I could say *The chair nearly fell over*, or even *The chair half fell over*.

The idea of an incremental theme further explains the significance of the arguments of a potentially telic verb for coercing a perfective or

⁶¹ David Dowty (1991) coined the term, though the notion was also discovered and discussed by Manfred Krifka (cf. Filip 1999, 2).

⁶² Susan Rothstein’s explanation is helpful: “This means that the denotation of [in this case] the patient argument is involved incrementally in the event denoted by the verb: we assign a part structure to the event and a part structure to the patient participant and as the running time of the event grows bigger, the proportion of the patient involved in the event will increase too” (Rothstein 2004, 33). Dowty’s explanation (1991, 567) uses the mathematical term ‘homomorphism’: his rather complicated principle is that “THE MEANING OF A TELIC PREDICATE IS A HOMOMORPHISM FROM ITS (STRUCTURED) THEME ARGUMENT DENOTATIONS INTO A (STRUCTURED) DOMAIN OF EVENTS, modulo its other arguments.” More precisely, he states: “If x is a part of y , then if a telic predicate maps y (as Theme) onto event e , it must map x onto an event e' which is part of e .”

imperfective reading, given an aspectually ambiguous verb form, as in the following examples:⁶³

- (33) a. John played the sonata/three sonatas (in half an hour).
 b. John played sonatas/music (for three hours/every day).

In (33a), *the sonata* and *three sonatas* are measurable or quantised, so that we interpret the statement perfectly. Neither the indefinite plural *sonatas* nor the mass Noun *music* in (33b) is quantised, so the statement is either durative (*for three hours*) or habitual (*every day*).

Furthermore, with a perfective telic statement, the process is understood to go to completion, so that the incremental theme is also seen as completed. This explains the oddness in (34).

- (34) John played the sonata. ?He only got as far as the second page, though.

The first sentence implies that John played the *entire* sonata. A perfective telic statement therefore involves what I will call a **completive** construal of the process with respect to the incremental theme.⁶⁴

3.2. *Variations in profiling of [EXPLORE], [SEARCH], and [SEEK]*

Langacker (1987a, 267–74) makes some important observations with regard to variations in profiling of processes, both with simple and complex processes. “Profiling is a matter of degree, and even when a particular portion of a trajectory can be identified as a kind of ‘focal area,’ there is often considerable flexibility as to how far the profiled region extends outward from the focus” (Langacker 1987a, 271). He gives the following examples of the Verb *believe*, which is more typically imperfective:

- (35) a. My wife believes that I was working at the office last night.
 b. My wife believed what I told her. (Langacker 1987a, 271)

The difference between these “hinges on whether the profile is restricted to the constant situation of holding a belief, or is expanded to include the initial judgment through which this situation comes about” (271). In other words, *believe* allows both stative and inceptive uses, which are imperfective and perfective, respectively.⁶⁵

⁶³ For a larger set of examples, see Rothstein 2004, 30.

⁶⁴ Cf. “completive” in Halliday and McDonald 2004, 353.

⁶⁵ For more examples of stative and inceptive readings of English Verbs, see Jackendoff 1990, 91. In Spanish, the Past Imperfect (*sabía*) and Past Indefinite (*supe*)

With a telic process, the profiling contrast relates particularly to the end of the process, rather than the beginning. Verbs in [EXPLORE] and its extensions are typically used to denote telic processes, where the incremental theme is the AREA/TOPIC. Perfective uses, where the AREA/TOPIC is salient, therefore tend to be completive: they imply that the AREA/TOPIC is explored completely. For example, in Deuteronomy 1:24 the implication is that the men spied out (וִירְגְלוּ) the whole Eshcol Vally, not merely a part of it:⁶⁶

- (36) וַיָּבֹאוּ עַד-נַחַל אֶשְׁכּוֹל וַיִּרְגְּלוּ אֹתָהּ
 wayy-ābō'-û 'ad=naḥal eškōl
 CO.NARR-come-3MPL until=river.valley(CNST) Eshkol
 way-raggēl-û 'ōt-āh
 CO.NARR-spy.out\INTS-3MPL ACC-3FSG.POSS
 "They came to the Valley of Eshcol and **spied it out**" (Deut 1:24b)

With [SEARCH], the situation is more complex. Compare the following examples with the Verb חָפַשׁ:

- (37) a. נֵר יְהוָה נְשִׁמַּת אָדָם חָפַשׁ כָּל-חֲדָרֵי-בֶטֶן
 nēr yhwh nišmat 'ādām ḥōpēš
 lamp YHWH breath|CNST human **search**\PART
 kol=ḥadrê=bāten
 all=inner.room|CNST=belly
 "The human breath is the lamp of YHWH, searching all the inner-most parts." (Prov 20:27)
- b. וַחֲפָשׂוּ אֶת-בֵּיתְךָ וְאֵת בֵּיתֵי עַבְדֶּיךָ
 wě-ḥippēš-û 'et=bêt-kā wě-'ēt
 CO-search\INTS-3PL ACC=house-2MSG.POSS CO-ACC
 bātt-ēy 'ābād-ē-kā
 house-MPL|CNST servant-MPL-2MSG.POSS
 "And they will search your house and the houses of your servants."
 (1 Kgs 20:6)

forms of the Verb *saber* "know" have stative and inceptive meanings, respectively. Langacker provides a more complex (physical) example of variation in profiling, with four uses of the Verb *jump* (Langacker 1987a, 271, examples 22a–d). These show that, although "the focal area is the moment when the trajector leaves the ground," "other facets of the overall event (e.g., the activity leading up to the departure from the ground, the subsequent spatial path, and even the planning/scheduling phase) can nevertheless be rendered more prominent and brought within the profile" (271).

⁶⁶ There are several ways in which a completive nuance—or any other aspectual category—could be expressed in the annotation process. The simplest in my own system would be use tag relevant annotations with the semantic type 'Completive.'

- c. וְהָיָה אִם-יִשְׁנֶה בָּאָרֶץ וְחִפְּשֵׁתִי אֹתוֹ בְּכָל אֶלְפֵי יְהוּדָה
 wě-hâyâ 'im=yeš-nô b-ā-'āreš wě-ḥippas-ti
 CO-be COND=EXIST-MSG LOC-ART-land CO-search\INTS-1SG
 'ōt-ô bě-kōl 'alp-ê yěhūdâ
 ACC-3MSG LOC-all thousand-MPL|CNST Judah
 “And if he is in the land, I will search him out among all the thou-
 sands of Judah.” (1 Sam 23:23)

In (37a), the “searching” activity is telic, but is viewed imperfectively (habitually or generically), hence the Participle. In both (37b) and (37c), the perfective Verb denotes a complete seeking process: the event is viewed “in its entirety, without regard to internal temporal constituency” (Comrie 1976, 12), and the temporal profile of חִפֵּשׁ includes its end point.

Nevertheless, (37b) and (37c) have quite different meanings. This is because there are *two* well-defined and intrinsic reasons for a search to reach its terminal point. As with [EXPLORE], the incremental theme in [SEARCH] is the AREA, and a search is completed when the AREA has been completely covered—for example, if the search is unsuccessful, or if the aim is to find all instances of a non-specific SOUGHT ENTITY within the AREA, as in (37b). However, a search may also be completed when the SOUGHT ENTITY is successfully located.

This second end point is not related to the telic nature of a search, since the SOUGHT ENTITY is not an incremental theme; but it is nonetheless an integral aspect of searching. In this, it differs from other reasons for the abrupt end of a search, such as an unexpected interruption or the end of a designated time. Whether the locating event can be included within the temporal profile of a [SEARCH] term is language- and context-specific: English requires a Phrasal Verb like *search out*.⁶⁷ In (37c), however, חִפֵּשׁ itself carries this sense: Saul is pledging to search for David until he has found him.⁶⁸ The syntactic indicator of this sense is the use of the SOUGHT ENTITY rather than the AREA as the Object in the Transitive Clause; that is, a perfective construal combined with a heightened salience for the SOUGHT ENTITY, in the context, yields the idea “search-and-find.” I will call this a

⁶⁷ Compare other phrasal Verbs with similar meanings: *hunt* → *hunt down*, *track* → *track down*.

⁶⁸ This is the interpretation of most ETs, apart from HCSB. HALOT gives this sense (“track down”) for חִפֵּשׁ in Amos 9:3.

resultative use of the term; and as we will see, חקר also supports a resultative use.

[SEEK] differs from [SEARCH] in that the AREA is far less salient in the former than in the latter; for this reason, unless the AREA is explicit or contextually accessible, terms that evoke [SEEK] are typically used for atelic situations. That is, “seeking” is often not construed as a process that progresses measurably across some well-defined area.

Like [SEARCH], however, [SEEK] terms may be used resultatively (i.e., including the locating event); indeed, cross-linguistically this is probably more common, since the SOUGHT ENTITY is the primary landmark. Thus, in Slovene the Perfect form *poiskati* is resultative (“look for until found”), as opposed to the imperfective *iskati* (“look for”).⁶⁹ English *seek* cannot be used resultatively on its own; again, it requires a Phrasal Verb, like the rather archaic *seek out*.⁷⁰ BH בִּקֵּשׁ used perfectly can be either non-resultative (38a) or resultative (38b), with little to distinguish them apart from the context. Thus, the HCSB quite reasonably translates בִּקֵּשׁ in (38b) as “has found.”

(38) a. בִּקֵּשׁתִּי וְלֹא מָצָאתִי

biqqaš-ti-w *wə-lō' mēšā'-tī-w*
seek\ints-1sg.prf-3msg.obj co-neg find-1sg.prf-3msg.obj
 “... I **sought** him but did not find him” (Song 3:1b)

b. בִּקֵּשׁ יְהוָה לֹא אִישׁ כְּלָבָבוֹ

biqqēš *yhwh l-ô 'iš*
seek\3MSG.PRF.INTS *yhwh DAT-3MSG* man
ki-lbāb-ô
 EQT-heart(MSG)-3MSG.POSS
 “YHWH has **sought out** a man according to his own will” (1 Sam 13:14)⁷¹

Another BH Verb with a resultative use is הָכָה (*hi.* of נָכָה) “strike,” which can mean “strike dead”;⁷² and in this case, there is a similarity with English Verbs like *shoot* and *stab*.

⁶⁹ David Shead, pers. comm. Spanish *buscar* has a resultative sense which is further developed, meaning “get, collect, pick up”; e.g., *Busca un médico* “Get a doctor.”

⁷⁰ In fact, the closest English equivalent to Slovene *poiskati* is probably *find*, but in reverse: when used imperfectively, as in the Progressive *I am just finding a book*, *find* can profile the discovery along with the seeking process that leads up to it.

⁷¹ There are various possible interpretations of כְּלָבָבוֹ, but these do not affect the point under discussion.

⁷² Compare, for example, הָכָה in Exodus 2:11–13, followed by הָרַג “kill” in v. 14.

The existence of a resultative use for a word clearly cannot be predicted from general principles, for which reason it *is* significant for lexical semantic description. Even more, a resultative construal involves a metonymic extension of the temporal profile, so that other frames in a broader complex process are evoked (e.g., [SEEK]→[LOCATE]); it therefore constitutes at least a subsense, if not a distinct sense, of the lexeme. This will particularly be illustrated with the use of חָקַר in Psalm 44:22[21].

In further removed uses, the change in temporal profile may involve not merely an *extension*, but a metonymic *shift*, so that the ‘focal area’ is a prior or subsequent event/state in the complex process. As we will see in chapter 10 (§2.10), this is probably the case with חָקַר in Job 8:8.

Nevertheless, in such cases it can be difficult to know which frame, simple or complex, is most appropriate. Does חָקַר in Job 8:8 belong in [INVESTIGATE], [COME TO UNDERSTAND], [UNDERSTANDING], or some complex event consisting of a sequence of these? Resultative uses, and even completive construals in [EXPLORE], can also be difficult to locate precisely. Does בִּקֵּשׁ in (38b) evoke [SEEK] or, say, a larger [LOCATE PROCESS] complex event? Either way, the point is that temporal profiling and the evoking of frames are not discrete and determinate semantic phenomena, but are capable of fine-grained variations.⁷³ Consequently, such questions as those I have raised do not always have clear-cut answers—not even in a modern language, let alone an ancient one.

4. Concluding remarks

This cognitive sketch of “exploring,” “searching,” and “seeking” will help to clarify some of the difficulties encountered with חָקַר and similar terms in the HB. The number of factors which must be weighed in considering the flexibility and polysemy of חָקַר alone seems bewildering. They include the following:

⁷³ This is one of Langacker’s great themes: that at every point in linguistic semantics, we must capture the middle ground between discreteness and continuity. Thus, “semantic structure is dynamic with local stability; while it is limited, imposing any specific boundary would be arbitrary; it has both discreteness and continuity; and its indeterminacy does not imply the absence of structure and regularity” (Langacker 2003, 180).

- Whether there are one or two landmarks in the construal, and whether the primary landmark is the AREA (as with English *search* and *explore*) or the SOUGHT ENTITY (as with English *seek*)
- Whether the focal area of a use is the search/investigation process itself, or (by metonymy) the resulting event of discovery
- In a related way, how much of the overall search-discovery or exploration-knowing complex event is incorporated in the term's profile
- The possibility of entrenched sub-senses, based on characteristic use with certain kinds of participants (e.g., *search a person*) or certain contexts (e.g., *investigate a legal case*), or even fixed expressions (e.g., אִין חֶקֶר)
- The kinds of metaphoric or metonymic extensions which may be operative in more remotely related senses; for example, whether there is a sense "determine the extent (of something)"

In some cases, the general insights of recent cognitive linguistics, particularly in the area of recurrent metaphor mappings across languages and cultures, enable us to make reasonable assumptions. Nevertheless, it quickly becomes apparent that, in the case of BH, we cannot always draw firm conclusions on these questions. This is the difficulty of studying an ancient language. However, this does not imply that such cognitively-oriented questions are worthless. On the contrary, wrestling with these issues forces us to attend to significant aspects of meaning, which we might otherwise avoid; and ultimately, it will both yield a more finely-nuanced analysis, *and* help to identify the limits of our knowledge of BH semantics.

CHAPTER TEN

חֶקֶר AND TERMS FOR EXPLORING AND SEARCHING IN BH

Having broadly mapped out the conceptual ‘shape’ of ideas related to “exploring,” “searching,” and “seeking,” we will now examine BH חֶקֶר in detail, and compare it with some similar terms. To begin with, I will present some of the relevant data for חֶקֶר, starting (for convenience) with the text of all the occurrences in the HB.

1. חֶקֶר: *Preliminary presentation of the data*

1.1. *Initial categorisation of occurrences*

A useful way of organising the instances of חֶקֶר, at least to begin with, is by semantic category—which relates mainly to the AREA or TOPIC of searching/investigation.¹ This is not the only possible categorisation, but it reflects the results of my frame-semantic analysis.

Commentators rightly observe that we must distinguish between physical and mental senses of חֶקֶר—that is, exploring a physical area or object, and exploring an idea, a person’s attitude, a claim, and so on.² However, this must be qualified. First, while there is a real difference between these, the difference must not be overstated, because the latter employs a spatial image schema: a non-physical domain can be construed as an ‘area’ that may be traversed for some purpose (e.g., to gain a detailed understanding of it).³ Second, in some cases the spatial/physical construal of an abstract search domain is so strong and intentional that the use of חֶקֶר belongs in two senses simultaneously. Job 28:27 is a case in point:⁴ God’s “exploration” of חֵכְמָה (“wisdom”) is the climax to a figurative sub-poem (vv. 20–27), in

¹ Luis Alonso Schökel (1994, s.v. חֶקֶר) proceeds in this way: “El significado se diferencia o afina según el complemento” (The meaning is differentiated or fine-tuned according to the complement).

² Cf. SDBH, s.v. חֶקֶר; Van Hecke 2003c, 140–41.

³ The idea of image schemata may critique parts of Habel’s analysis of terms like דֶּרֶךְ “way” and מָקוֹם “place” as denoting the “codes” or “inner mysteries” of creation (Habel 2003).

⁴ Contra Aitken 2003, 129; van Wolde 2003b, 6.

which חֶקֶמָה is first portrayed as an object buried or hidden somewhere in the material world, which God alone can find; and having “seen” it (i.e., uncovered its location), God further “explores” it. The prior use of חֶקֶר in v. 3 strengthens this physical image; as Aitken notes, “There is a development [in Job 28], therefore, from the searching for a physical object to the searching for a cognitive (although almost personalized) object by God” (Aitken 2003, 122). The physical/spatial sense is thus fully active; yet it is obviously a metaphor for studying and coming to a full knowledge of what constitutes wisdom—the summary of which is given in verse 28.⁵

An even clearer example is Proverbs 25:3, which begins with three conjoined entities (as a compound *casus pendens*): שָׁמַיִם “the heavens,” וָאָרֶץ “and the earth,” וְלֵב מְלָכִים “and the heart of kings.” This is followed by the main verbless predication, which pertains equally to each of these: אֵין חֶקֶר “there is no searching” (i.e., “they cannot be searched”).⁶ This structure both illustrates and exploits the cognitive metaphor underlying the abstract use(s) of חֶקֶר. The opening conjoined NP serves as the multi-faceted area of exploration (or non-exploration) for חֶקֶר in the following Existence Clause. More accurately, two of these three elements are physical AREAS (שָׁמַיִם and אָרֶץ), while לֵב מְלָכִים is a physical organ that metonymically stands for the mind, will, or attitude of a person. That is, this is a *personal* EXAMINEE along with a body part representing an aspect of their personality. The comparison between the three⁷ suggests, then, that a king’s heart is here conceptualised as a spatial region, which an agent might traverse in order to come to know its internal features.

Despite these caveats, it is appropriate to begin with the physical sense of חֶקֶר terms before moving to the metaphorical extensions.

⁵ This counters one part of Scott Harris’s argument that the feminine pronominal suffixes in v. 27 (“saw it,” etc.) refer to creation rather than to wisdom (Harris 1983). Against the standard view, he writes: “Lastly, to argue that the four verbs in v. 27 refer to wisdom is itself problematic because not one of these four verbs is ever used with *hokmā* as its object anywhere else in Hebrew scripture. That would make this verse highly unusual” (Harris 1983, 421). The verse is, however, unique in the imagery being exploited, so that unusual combinations are (paradoxically) to be expected. The claim that the Verbs in v. 27 relate to the work of an engineer (Aitken 2003, 122, citing Alonso Schökel and Sicre Díaz 1983, 403) strengthens my position.

⁶ The grammar will be analysed more carefully in due course.

⁷ A comparison of two items “can be weakly expressed by a mere Waw” (Joüon-Muraoka §174h, citing this instance); cf. *IBHS* §39.2.3b n. 13.

We will return to the semantic categories in due course, and define them more carefully in terms of frames and frame elements. For now, I will briefly list the basic categories, along with the instances of חקר that fit into each one.⁸ For some, I will also provide a brief statement of context.

1. Search/explore a physical space.

- a) Judges 18:2 (x2). The tribe of Dan seeks an inheritance to live in (v. 1).

וַיִּשְׁלְחוּ בְנֵי־דָן מִמִּשְׁפַּחְתָּם חֲמֵשָׁה אָנָשִׁים . . . לְרַגֵּל אֶת־הָאָרֶץ
וּלְחַקְרָהּ וַיֹּאמְרוּ אִלֵּיהֶם לָכוּ חִקְרוּ אֶת־הָאָרֶץ

So the people of Dan sent from their tribe five men . . . to spy out the land and to *explore* it. And they said to them, “Go and *explore* the land.”

- b) 2 Samuel 10:3. The nobles of Hanun of the Amorites question David’s apparent display of loyal kindness (חֶסֶד).

הֲלוֹא בַעֲבוּר חֲקֹור אֶת־הָעִיר וּלְרַגֵּלָהּ וּלְחַפְּכָהּ שָׁלַח דָּוִד אֶת־עֲבָדָיו
אֵלָיָהּ:

“Has not David sent his servants to you in order to *search* the city and to spy it out and to overthrow it?”

- c) Jeremiah 31:37.

כֹּה אָמַר יְהוָה אֱסִימוּדוֹ שְׁמַיִם מִלְמַעְלָה וַיַּחְקְרוּ מוֹסְדֵי־אָרֶץ לִמְטָה
גַּם־אֲנִי אֶמְאָס בְּכָל־זֶרַע יִשְׂרָאֵל עַל־כָּל־אֲשֶׁר עָשׂוּ נְאֻם־יְהוָה:

Thus says YHWH: “If the heavens above can be measured, and the foundations of the earth below can be *explored*, then I will cast off all the offspring of Israel for all that they have done, declares YHWH.”

- d) Jeremiah 46:23. A force will attack Egypt from the north. Egypt will flee with the sound of a snake, and the army will come against her with axes like those who chop down trees.

כָּרְתוּ יַעֲרָה נְאֻם־יְהוָה כִּי לֹא יִחְקַר כִּי רַבּוּ מֵאַרְבֶּה וְאֵין לָהֶם מִסְפָּר:

They will cut down her forest, declares YHWH, for [or though] it cannot be *sought*, for they are more numerous than locusts, and they are innumerable.

⁸ Where there are *ketib* and *qere* readings, the *qere* is provided in parentheses. The translations are sometimes intentionally vague and provisional; more detailed analyses will be provided below.

- e) Ezekiel 39:14. After the slaughter of Gog and Magog, Israelite men will be set apart to travel through the land and bury any remaining dead bodies, to cleanse the land.

מִקֵּץ שִׁבְעָה־חֳדָשִׁים יִחְקְרוּ:

From the end of seven months they will *search*.

- f) Job 28:3. The famous chapter on wisdom begins with images of people extracting precious metals from the earth.

קִץ שֵׁם לַחֲשֹׁךְ וְלִכְלִי־תְּכֵלֶת הוּא חוֹקֵר אֶבֶן אֶפֶל וְצִלְמוֹת:

He puts an end to darkness, and to the farthest limit he *searches* the ore in darkness and deep shadow.

- g) 1 Chronicles 19:3 (=2 Samuel 10:3).

הֲלֹא בַעֲבוּר לַחֲקֹר וְלַהֲפֹךְ וְלַרְגֹּל הָאָרֶץ בָּאוּ עֲבָדָיו אֵלַי:

“Have not his servants come to you *to search* and to overthrow and to spy out the land?”

2. Examine a person, or a person’s heart, behaviour, etc. I have included in this category instances of personal examination in both non-legal and legal settings, since differentiating these is not straightforward.

- a) 1 Samuel 20:12. Jonathan responds to David’s fear that Saul means to kill him.

כִּי־אֶחָקֵר אֶת־אָבִי כַּעַת מֶחָל הַשְּׁלִשִׁית וְהִנֵּה־טוֹב אֶל־דָּוִד וְלֹא־אֶזְאֹל אֶשְׁלַח אֵלָיְךָ וְגִלִּיתִי אֶת־אֲזָנֶיךָ:

“When I have *searched* my father, about this time tomorrow or the third day, see—if he is favourably inclined toward David, will I not then send word to you and let you know?”

- b) Judges 5:16. The tribes that failed to follow Deborah and Barak to battle are rebuked.

לָמָּה יִשְׁבַּת בֵּין הַמִּשְׁפָּתִים לִשְׁמַע שְׂרָקוֹת עֵדְרִים לַפְּלָגוֹת רְאוּבֵן גְּדוּלִים חֲקֵר־לֵב:

Why did you stay among the sheepfolds, to hear the whistling for the flocks? Among [or, With regard to] the clans of Reuben, the *searchings* of heart were great.

- c) Jeremiah 17:10.

אֲנִי יְהוָה חֶקֶר לֵב בְּתוֹן כְּלִיּוֹת וְלִתֵּת לְאִישׁ כְּדָרְכּוֹ (כְּדָרְכָּיו) כִּפְרִי מַעַלְלָיו:

“I YHWH *search* the mind, I test the heart,⁹ to give to each person according to their ways, according to the fruit of their deeds.”

- d) Psalm 44:21–22[20–21]. The Psalmist expresses bewilderment at God’s apparent rejection of the nation despite their covenant faithfulness.

אִם־שָׁכַחְנוּ שֵׁם אֱלֹהֵינוּ וְנִפְרָשׁ כַּפֵּינוּ לְאֵל זָר: הֲלֹא אֱלֹהִים יִחְקֶר־זֹאת
כִּי־הוּא יֹדֵעַ תַּעֲלָמוֹת לֵב:

If we had forgotten the name of our God or spread out our hands to a different god, would not God *discover* this? For he knows the secrets of the heart.

- e) Psalm 139:1.

יְהוָה חִקְרָתָנִי וַתֵּדַע:

O YHWH, you have *searched* me and know me.

- f) Psalm 139:23.

חִקְרָנִי אֵל וְדַע לִבִּי בְּחִנִּי וְדַע שְׂרָעִפִּי:

Search me, O God, and know my heart! Test me, and know my disquieting thoughts!

- g) Job 13:9. Job challenges his friends over their presumption to speak for God.

הֲטוֹב כִּי־יִחְקֹר אֶתְכֶם אִם־כִּהְתֵּל בְּאַנּוֹשׁ תִּהְתָּלוּ בּוֹ:

Will it go well when he *searches* you? Or would you deceive him, as one deceives a man?

- h) Job 34:24. God’s just judgment is described.

יִרָע כְּבִירִים לֹא־חֶקֶר וַיַּעֲמֵד אֲחֵרִים תַּחְתָּם:

He shatters the mighty without *investigation* and sets up others in their place.

- i) Proverbs 18:17.

צַדִּיק הָרִאשׁוֹן בְּרִיבוֹ יֵבֹא־ (וּבֹא־) לְעֵהוּ וַיִּחְקְרוּ:

The first in his legal case is right, [until] the other comes and *examines* him.

- j) Proverbs 25:3. This follows a proverb which says (in the MT) that the glory of kings is “to search a matter” (הִקָּר דָּבָר).

⁹ This follows the NET translation of לֵב and בְּלִיָּה; cf. NET n. 18 at Jeremiah 17:10.

שָׁמַיִם לְרוֹם וָאָרֶץ לְעֵמֶק וְלֵב מְלָכִים אֵין חֶקֶר:

The heavens to the height, and the earth to the depth, and the heart of kings: there is no *searching* [these].

k) Proverbs 28:11.

חָכָם בְּעֵינָיו אִישׁ עָשִׂיר וְדָל מִבֵּין יִחְקְרוּ:

A rich person is wise in his own eyes, but a poor person who has understanding will *search* him.

l) Lamentations 3:40.

נַחֲפָשָׁה דְרָכֵינוּ וְנַחֲקְרָה וְנָשׁוּבָה עַד־יְהוָה:

Let us search and *examine* our ways, and let us return to YHWH.

3. Investigate a fact, a question, the truth, etc. Once again, this category includes legal uses, which makes for some overlap with the preceding category.

a) Deuteronomy 13:15[14]. This is part of a future scenario, in which reports arise of people urging the inhabitants of their city to serve other gods.

וְדִרְשָׁתָּ וְחִקְרָתָּ וְשָׁאֲלָתָּ הֵיטֵב וְהִנֵּה אֲמַת נָכוֹן הַדָּבָר נִעְשְׂתָה הַתּוֹעֵבָה הַזֹּאת בְּקִרְבְּךָ:

... then you shall inquire and *search* and ask thoroughly. If it is indeed true and the matter established that this abomination has been done among you ...

b) 1 Kings 7:47. Here the detailed description of the materials and articles for Solomon's palaces reaches a climax.

וַיֵּנַח שְׁלֹמֹה אֶת־כָּל־הַבָּלַיִם מְרַב מְאֹד מְאֹד לֹא נִחְקַר מִשְׁקַל הַנְּחֹשֶׁת:

Solomon left all the vessels, because there were so many; the weight of the bronze was not *investigated* [or, *ascertained*].

c) Job 5:27. Eliphaz has spelled out the moral regularity of life, and the many blessings that will come Job's way if he will only seek God (v. 8) and accept his discipline (v. 17).

הִנֵּה־זֹאת חִקְרֶנּוּהָ כִּי־הִיא שְׁמֻעָנָה וְאִתָּהּ דַּע־לֶךְ:

Take note of this! We have *investigated* it; it is true. Hear it, and know it for your own good.

d) Job 8:8. Bildad defends God's just judgment, and urges Job to plead for mercy and to become pure and upright. However, the

expression **לְחַקֵּר אֲבוֹתָם** in verse 8 looks forward to statements about the godless in verses 11–13.

כִּי־שִׁאל־נָא לְדֹר רִישׁוֹן וְכוּנִן לְחַקֵּר אֲבוֹתָם:

For inquire of the former generation, and consider the *investigation* of their fathers.

- e) Job 29:16. Job defends his righteousness.

אֲבֹתִי לְאֲבִיוָנִים וְרַב לֹא־יָדַעְתִּי אַחְקָהוּ:

I was a father to the needy, and I *investigated* the case of the person I did not know.

- f) Job 36:26. Elihu expounds the might and goodness of God's works.

הֲ־אֵל שֶׁגִּיד וְלֹא גִדַּע מִסֶּפֶּר שָׁנָיו וְלֹא־חִקֵּר:

Yes, God is great, and we do not know; the number of his years, and no *searching*.

- g) Proverbs 25:2.

כְּכֹד אֱלֹהִים הִסְתֵּר דְּבָר וּכְכֹד מְלָכִים חָקֵר דְּבָר:

It is the glory of God to conceal a matter, and it is the glory of kings to *search* a matter.

- h) 2 Chronicles 4:18 (cf. 1 Kgs 7:47).

וַיַּעַשׂ שְׁלֵמָה כָּל־הַבָּלִים הָאֵלֶּה לְרֹב מְאֹד כִּי לֹא נִחְקַר מִשְׁקַל הַנְּחֹשֶׁת:

Solomon made all these things in great quantities, for the weight of the bronze was not *investigated* [or, *ascertained*].

4. Search/explore some other abstract area or construed entity.

- a) Isaiah 40:28. Israel has complained that God has not noticed or regarded the injustice of her situation.

הֲלֹא יָדַעְתָּ אִם־לֹא שָׁמַעְתָּ אֱלֹהֵי עוֹלָם | יְהוָה בּוֹרֵא קִצּוֹת הָאָרֶץ לֹא יִיָּעַף וְלֹא יִיָּגַע אֵין חִקֵּר לְתַבּוּנָתוֹ:

Do you now know? Have you not heard? YHWH is an eternal God, the creator of the ends of the earth. He does not become tired or grow weary; there is no *searching* his understanding.

- b) Psalm 145:3.

גָּדוֹל יְהוָה וּמִהֲלֵל מְאֹד וְלֹגְדָלְתּוֹ אֵין חִקֵּר:

Great is YHWH, and very worthy of praise, and there is no *searching* his greatness.

- c) Job 5:8–9. Eliphaz has described the tragic destiny of the fool.

אוֹלָם אֲנִי אֶדְרֹשׁ אֶל-אֱלֹהִים וְאֶל-אֱלֹהִים אֲשֶׁם דִּבַּרְתִּי: עֲשֵׂה גְדֻלוֹת וְאֵין חֶקֶר נִפְלְאוֹת עַד-אֵין מִסְפָּר:

But as for me, I would seek God, and to God would I put forward my case, who does great things which there is no *searching*, marvelous things beyond number.

- d) Job 9:10. Job restates Eliphaz's axiom (5:9), but as part of his lament that contending with such a God of power and greatness is impossible (9:2–3).

עֲשֵׂה גְדֻלוֹת עַד-אֵין חֶקֶר וְנִפְלְאוֹת עַד-אֵין מִסְפָּר:

... who does great things beyond *searching*, and marvelous things beyond number.

- e) Job 28:27. God alone understands the way to wisdom and knows its place (v. 23), and has done so from the time of creation.

אֵין רָאָה וְיִסְפְּרָה הַכִּינָה וְגַם-חֶקְרָה:

Then he saw it and declared it; he established it and *explored* it.

- f) Job 32:11. Elihu's patience runs out, and he finally speaks his mind.

הֵן הוֹחַלְתִּי לְדַבְרֵיכֶם אֲזִין עַד-תְּבוּנָתֵיכֶם עַד-תַּחְקֶרְוּ מִלִּין:

Look, I waited for your words; I listened for your understandings, while you *searched* words.

- g) Proverbs 23:30. This is in answer to the question, "Who has woe?" (v. 29).

לְמֵאֲחֵרִים עַל-הֵיטֵן לְבָאִים לַחֶקֶר מִמֶּסֶד:

Those who linger over wine; those who go to *explore* mixed wine.

- h) Proverbs 25:27.

אֲכָל דְּבַשׁ הִרְבּוֹת לֹא-טוֹב וְחֶקֶר כְּבוֹד כְּבוֹד:

To eat much honey is not good, and to *explore* their glory [or, to explore difficult things] is (not) glorious.¹⁰

- i) Ecclesiastes 12:9.

וַיֵּתֶר שֶׁהָיָה קִהְלֹת חָכָם עוֹד לְמַד־יַעַת אֶת-הָעָם וְאֵין וְחֶקֶר תִּקְוָן מִשְׁלִים הִרְבָּה:

¹⁰ The difficulties, both textual and interpretive, will be discussed in due course.

As well as being wise, *qōhelet* also taught the people knowledge, and he weighed and *searched*, he arranged many proverbs.

5. Metonymic extension: unexplored area or mystery.

- a) Psalm 95:4. The greatness of YHWH is expounded.

אֲשֶׁר בְּיָדוֹ מַחְקְרֵי־אָרֶץ וְתוֹעֲפּוֹת הָרִים לוֹ:

... in whose hand are the *unexplored regions* of the earth, and the peaks of the mountains are his.

- b) Job 11:7. Zophar disputes Job's claim of innocence, and assures him that, by the profound wisdom of God, Job is even more guilty than his circumstances suggest.

הַחֶקֶר אֱלֹהֵי תִמְצָא אִם עַד־תִּכְלִית שְׂדֵי תִמְצָא:

Can you find out the *mysteries* of God? Can you find out the limit of the Almighty?

- c) Job 38:16. God questions Job to expose his lack of understanding of, and lack of power over, creation.

הֲבָאתָ עַד־נְבִי־יָם וּבַחֶקֶר תִּהְיוֹם הַתְּהֵלֶכֶת:

Have you gone to the springs of the sea, or walked about in the *recesses* of the deep?

1.2. Translations in the Septuagint

Of the Versions, the LXX is clearly the most valuable for semantic comparison. Accordingly, all the LXX translations for חקר terms are presented in table 10.1 on pages 246–47, with LXX verse numbers given in brackets where they differ from the MT. The most common word groups are: ιχν- (ἐξιχνιάζω, ἐξιχνεύω, ιχνεύω, ἀνεξιχνίαστος, ἵχνος), ἐταζ- (ἐτάζω, ἐξετασμός), ἐλεγχ- (ἐλέγχομαι, ἀνεξέλεγκτος), and περ- (πέρας, ἀπέραντος).

Three occurrences are not included in the table. In Proverbs 25:2 (חקר) and 25:27 (חַקֵּר), the LXX has τιμάω “honour”; but these verses are very difficult, and the LXX mistakenly reads יקר “be valued, honoured” for חקר (Van Leeuwen 1986). The third omitted occurrence is Jeremiah 31:37 [38:35] (נִחְקֵר): here the LXX has ταπεινούμαι (<ταπεινός) “be lowered, be humbled,” which is too remote from the MT, and probably a creative interpretation.

Two significant points stand out from the data. The first is the use of terms indicating *extent* or *limit/boundary*, particularly with ne-

gated חִקֵּר expressions. This provides some support for Van Hecke's "determine the extent of" sense, to which we will return.

The second significant point is the use of ἐκζητέω "seek," which rather stands out from the other words for "exploring," "searching," and "examining." In fact, ἐκζητέω is used in precisely the two verses with the strongest profile of the SOUGHT ITEM over the AREA—namely, Psalm 44:22[21] and Ezekiel 39:14.

1.3. *Parallels and potential paradigmatic relationships in the MT*

In my analysis, I identified and annotated terms in the text that stand in a relation of compatibility or incompatibility with חִקֵּר instances in the HB. The data is presented in table 10.2 (page 248).¹¹

Of course, these are only the compatibles/incompatibles that actually appear alongside חִקֵּר in the relatively limited corpus; there is no guarantee that these are the nearest synonyms or antonyms. Similarly, while the table entries are ordered according to the number of parallel occurrences for each compatible/incompatible, a higher number is not necessarily indicative of closeness of relationship. In particular, יָדַע is a very common and generic term, which explains its frequency, but it actually profiles the end point of a complex event beginning with חִקֵּר (e.g., [INVESTIGATE]→[COME TO UNDERSTAND]). Conversely, חָפֵּשׂ "search, examine" occurs alongside חִקֵּר only once, but is probably the nearest synonym in BH.

Nevertheless, the results illustrate some of the cognitive structures proposed in chapter 9. There are terms that belong primarily in two of the three schematic notions or frames underlying [EXPLORE]: הִלָּךְ and עָבַר belong in [SELF MOTION], while רָאָה belongs in [PERCEPTION ACTIVE].¹² Furthermore, [COGITATION] is presupposed by terms such as דִּרְשׁ and אָזַן. The combination of חִקֵּר and יָדַע expresses the metaphoric extensions of complex [EXPLORE] events, namely, [INVESTIGATE]→[UNDERSTANDING] and [EXAMINE PERSON]→[KNOWLEDGE PERSONAL].¹³

¹¹ Where a word is grammatically parallel with a חִקֵּר instance, but clearly has little semantic overlap, I have not included it (e.g., הִפִּיךְ "overthrow," 2 Sam 10:3 = 1 Chr 19:3). On compatibility and incompatibility, see ch. 2 §2.

¹² Of course, elsewhere רָאָה evokes a passive perception frame—in FrameNet, [PERCEPTION EXPERIENCE].

¹³ On these frames and structures, see ch. 9 §2.1, especially figs. 9.6 and 9.7.

Table 10.1 LXX translations of חקֵר occurrences

Heb.	LXX lexeme	Meaning	References
חֲקֹר	ἐξιχνιάζω	“explore, trace, track out, search out”	Judg 18:2 (x2); Job 5:27; 13:9; 29:16
	ἐτάζω	“visit, try, afflict, test”	Jer 17:10; Lam 3:40; Job 32:11 ^a
	δοκιμάζω	“assay, test, prove”	Ps 139[138]:1, 23
	ἐρευνάω	“search”	Deut 13:15; 2 Sam 10:3
	ἐκζητέω	“seek (out), search, weigh”	Ps 44:22 [43:22]; Ezek 39:14
	ἐξιχνεύω	“fathom, track out, examine”	Job 28:27
	ἱχνεύω	“track out, seek after” (= חֲקֹר לְ אַחֲרָיִךְ “go to search”)	Prov 23:30
	ἐξερευνάω	“search out, examine, investigate”	1 Chr 19:3
	καταγινώσκω	“disapprove” or “condemn”?	Prov 28:11 ^b
	ἀνακρίνω	“examine closely, interrogate”	1 Sam 20:12
	ἐλέγχομαι	(< ἐλέγχω) “put to shame,” “reprove,” or “cross-examine (for purpose of) reproving” (cf. Liddell-Scott; LXX uses passive for active Hebrew)	Prov 18:17
חֲקֹרְךָ	ἐξακριβάζομαι	“examine accurately” ^c	Job 28:3 ^a
	ἐκλείπω	“cease, end”	2 Chr 4:18
	εἰμὶ τέρμα	“be (no) limit”	1 Kgs 7:47[32]
חֲקֹר	εἰκάζομαι	(< εἰκάζω) “be guessed, conjectured”	Jer 46:23 [26:23]
חֲקֹר	ἐξιχνιάζω	“explore, trace, track out, search out”	Eccl 12:9 (cf. חֲקֹר, חֲקֹרְךָ)

Table 10.1 (*continued*)

Heb.	LXX lexeme	Meaning	References
קָרָה	ἀνεξιχνίαστος	“unsearchable, inscrutable” (= קָרָה לֹא/יֵין)	Job 5:9; 9:10; 34:24? ^d
	ἵχνος	“track, footstep, route”	Job 11:7; 38:16
	ἐξιχνιάζω	“explore, trace, track out, search out”	Job 8:8 ^e (cf. קָרָה, קָרָה)
	ἀνεξέλεγκτος	“unable to be cross-examined or criticised” ^f	Prov 25:3
	ἐξεύρεσις	“discovery, finding out, search- ing out”	Isa 40:28
	πέρας	“limit, boundary”	Ps 145[144]:3 (cf. מִקְרָה)
	ἀπέραντος	“boundless, countless, infinite” (= קָרָה לֹא)	Job 36:26 ^{a,g}
	ἐξετασμός	“close examination”	Judg 5:16
מִקְרָה	Πέρας	“limit, boundary”	Ps 95[94]:4 (cf. קָרָה)

Source: LXX data taken from Tov and Polak 1987.

^aThe text is not witnessed in the Old Greek, and is marked in Origen’s Hexapla as an addition by Theodotion (cf. Tov and Polak 2005, §9.G).

^bAquila and Theodotion have ἐξιχνιάσει (ἐξιχνιάζω) (Thomas 1937, 403).

^c“ἐξακριβάζομαι, ‘to find out accurately,’ is a LXX neologism, apparently first coined by the translator of Numbers (23:10), and a derivative of the stem ἀκριβ-, which belongs to the typically philosophical and scientific register of the Classical Greek vocabulary, e.g., Plato, Aristotle, Hippocrates” (Muraoka 2003, 95).

^dThe LXX diverges from the MT in Job 34:24, and there is no simple textual solution. Nevertheless, the identification of קָרָה לֹא with ἀνεξιχνίαστα (Muraoka 2003, 95; compare קָרָה יֵין in Job 5:9 and 9:10) is far more likely than identification of קָרָה with ἀριθμός (Tov and Polak 1987).

^eThe LXX differs slightly from the MT, but the correspondence seems clear enough.

^fLust, Eynikel, and Hauspie 1992 has “*incapable of disproof or criticism*,” which gives it a rather aggressive flavour; cf. Liddell-Scott, s.v. ἀνεξέλεγκτος “*unquestioned, impossible to be questioned or refuted*,” s.v. ἐξελέγχω II. “*to search out, put to the proof*,” and s.v. ἐλεγκτικός “*fond of cross-questioning or examining*.”

^gSo Tov and Polak 1987, *contra* Muraoka 2003, 95, who identifies קָרָה לֹא with οὐ γινώσμεθα “we shall not know”; however, the structure of the LXX exactly mirrors that of the MT, and the correlation is unambiguous.

Table 10.2 Compatible and incompatible terms parallel to חקר in the HB

Term	Compatibility	Incompatibility
<i>qal</i> חקר	יָדַע “know” (Jer 17:9–10; Ps 44:22[21]; 139:1, 23; Job 5:27), רָגַל <i>pi</i> “spy out” (Judg 18:2; 2 Sam 10:3 = 1 Chr 19:3), בָּחַן “test” (Ps 139:23; Jer 17:10), חָפַשׁ “search, examine” (Lam 3:40), דָּרַשׁ “inquire about” (Deut 13:15[14]), שָׁאַל “ask” (Deut 13:15[14]), עָבַר “pass through” (Ezek 39:14), הָלַךְ “go” (Judg 18:2), רָאָה “see” (Ps 139:23–24)	הִסְתִּיר <i>hi</i> “hide” (Prov 25:2)
<i>pi</i> חקר	אָזַן <i>pi</i> “weigh, evaluate” (Eccl 12:9)	
<i>ni</i> נחקר	יָמַד <i>ni</i> (< מִדַּד) “be measured” (Jer 31:37)	
חקר	מִסְפָּר “number” (Job 5:9; 9:10), תְּכֵלִית “extremity” (Job 11:7), יָדַע “know” (Job 36:26), נִבְּיָה “source (of the sea)” (Job 38:16), תַּעֲלָמָה “secret” (Job 11:6–7)	
מִחְקָר		תּוֹעֲפּוֹת “peak (of mountain)” (Ps 95:4)

Other terms in the list demonstrate some of the other concepts which may be used alongside חקר to express abstract ideas. In Jeremiah 17:10 and Psalm 139:23, חקר and בָּחַן both describe aspects of an activity undertaken by God/YHWH, but בָּחַן uses the source domain of testing metals. שָׁאַל and דָּרַשׁ in Deuteronomy 13:15[14] specify the means for “investigating” (חקר) a report.

On the other hand, some of the terms do not readily fit into our general cognitive model, such as נִבְּיָה, תַּעֲלָמָה, תּוֹעֲפּוֹת, תְּכֵלִית, מִסְפָּר, and יָמַד—and the last four of these suggest that we need to consider the role that EXTENT has in the senses of חקר terms.

This analysis of parallel terms has two functions. First, it prompts questions about the potential range of senses of the חקר terms. Second, it provides a starting list of terms that potentially belong in the same semantic fields or frames as חקר. This is only a start, of course, and identifying semantically related LUs requires a broader examination of the HB. We will return to some of these issues in the subsequent sections.

1.4. “Search out” and ambiguous categorisations

Before we turn to detailed exegesis, I wish to comment on the rather uncommon English compound Verb *search out*, which appears as a gloss for חָקַר in many ETs, lexica, and commentaries. What precisely does *search out* mean? In fact, it is ambiguous: it can mean either “search for and locate (something)” or “search (an area) thoroughly,” as in examples (1a) and (1b), respectively.¹⁴

- (1) a. We were very reluctant to **search out someone new**.¹⁵
 b. We’d paddle around and after awhile we’d **searched out the whole bay** and decided to take the board over and get it in some surf.¹⁶

The force of the particle *out* is, I suggest, either resultative or intensive in the first use (“search for and find, search for diligently”), and completive in the second (“search completely, thoroughly”).¹⁷ It must be noted that the two constructions, *search out* SOUGHT ENTITY and *search out* AREA, are semantic incompatibles, and belong respectively with [SEEK] and [SEARCH].¹⁸

In discussions of חָקַר, there is variation in the intended meaning of *search out*. For instance, both James Crenshaw (1998, 117) and Matitiah Tsevat (TDOT V.149) use *search(ing) out* as a translation gloss for חָקַר in Proverbs 25:2, but Crenshaw clearly means “seek out

¹⁴ The English speakers I consulted confirmed this—though some found it difficult to identify a meaning. There may even be dialectal differences. Of the English dictionaries I consulted, the most helpful for *search out* were the *The New Penguin English Dictionary* (Allen 2000) and the monumental *OED*. *Penguin* defines *search out* as “to uncover, find, or ascertain (something) by investigation or searching”—that is, a resultative [SEEK] sense. The *OED*’s first two major sense groups for *search* correspond to my [SEARCH] and [SEEK], respectively, and *search out* appears in both groups. In the first group, *search [out]* has the sense “To investigate, make oneself thoroughly acquainted with; to examine rigorously,” etc. (I.5a). In the second group, *search [out]* has the senses “To look for or seek diligently, to try to find” (II.11a) and “To seek to discover” (II.11b). The third group of senses pertains to absolute and intransitive uses; and here it is noted that the difference between the first two groups “vanishes when the vb. is used *absol.*”

¹⁵ Sheri Jones, testimonial for Project Phoenix Media Productions, <http://www.projectphoenix.com/testimonials.asp>.

¹⁶ Susan Melanie Berry, Terri Craft, C. R. Stecyk, and Scott Starr, interview with James O’Mahoney, *Juice Magazine* 57, 2004, <http://www.juicemagazine.com/jamesomahoney.html>.

¹⁷ Compare, for instance, *eat up*, *drink up*, and *gobble up*, which are similarly completive (Cook 1996, 464 n. 9).

¹⁸ On semantic incompatibility, see ch. 2 §2.5.

(hidden things)” and Tsevat “search completely (legal cases).” At least with these two examples the meaning is clear; often, there is no indication whatsoever of the sense intended. In a semantic analysis, this obscures precisely what is required: a description of what differentiates the senses from one another.¹⁹

2. Positive instances: Exegetical notes

In this and the following two sections, I will comment on some of the exegetical issues relevant to both semantic and syntactic analysis of חקר instances. The negated instances (§§3–4) require special consideration, for which reason they have been separated from the positive. These comments are verse-by-verse groundwork; in §6 they will be drawn together to analyse the cognitive and frame-semantic structure of חקר terms.

2.1. Deuteronomy 13:15[14]

In Deuteronomy 13:15[14], the Adverb הַיֵּטֵב “well” is best taken as modifying each Verb in the list of actions, though Andersen-Forbes only subordinates it to שְׁאַלְתָּ. I have treated it as describing the EXTENT to which each activity should be conducted.

Semantically, the closest parallel to the use of חקר in Deuteronomy 13:15 is Proverbs 25:2, where the glory of kings is חֶקֶר דָּבָר “to investigate a matter.” In both cases, the matter in question is construed as an AREA to be explored and thus known.

2.2. Judges 5:16

As Andersen-Forbes rightly suggests, גְּדוֹלִים חֶקְרֵי־לֵב is not an Existence Clause (*contra* most ETs), for which the Adjective should follow its Head, but rather a Nonverbal Classifying Clause: “the searchings of heart [were] great.” The constituent order in such a Clause is Predicate-Subject (Andersen 1970; IBHS §8.4).

¹⁹ Van Hecke (2003c, 130–31) also notes the *search out* problem. Of course, this problem of ambiguous categorisation may occur without the use of *search out*, simply through imprecise or inconsistent description. For instance, in NIDOTTE (II.252) we read that the *qal* חקר is used like חפש “to signify searching for or probing an object or person (e.g., 1 Sam 20:12).” The implication, in the context, is that this is one sense described in two ways; but they mean quite different things.

The BHS apparatus, with the support of a few Hebrew mss and the Syriac, suggests harmonising the ends of Judges 5:15 with verse 16, so that both describe חִקְרֵי־לֵב “*searchings of heart*.” The poetic structure in the MT, however, is very subtle, and in my view חִקֵּר in verse 15 is more likely the result of erroneous harmonisation or assimilation. In the list of tribes (vv. 14–18), the first few tribes are commended for their willing participation in the battle. Reuben is the first of the exceptions. The introduction לְפִלְגֹת רְאוּבֵן גְּדוֹלִים חִקְי־לֵב “among the clans of Reuben great were the *resolves* of heart” presents Reuben as a staunch and brave clan, seemingly as the preceding tribes. Verse 16 then turns this into an indictment, with the accusing question, “Why did you sit among the sheepfolds listening to the playing of pipes for the flocks?” The conclusion about “*searchings of heart*” reverses the original appraisal with a wordplay. A possible interpretation, then, is that despite appearances or reputation of bravery, Reuben’s courage failed at the crucial moment.

2.3. Judges 18:2

Of all the ‘physical’ or non-figurative instances of חִקֵּר, Judges 18:2 is the most difficult for deciding whether there is a SOUGHT ENTITY—that is, for deciding between [EXPLORE] and [SEARCH]. Verse 1 tells us that the tribe of Dan “was seeking for itself (מְבַקֵּשׁ־לֹו) an inheritance for dwelling [in].” This context for the exploring of “the land” seems to suggest [SEARCH]—though the SOUGHT ENTITY is at best non-specific. Conversely, the instruction to the Danite representatives is simply לְרַגֵּל אֶת־הָאָרֶץ וּלְחַקְרָהּ “to spy out the land and to *hqr* it”; the close parallel with רָגַל is more suited to [EXPLORE]. The same combination, though in the reverse order, is used in 2 Samuel 10:3 (= 2 Chronicles 4:18) with an extra step: “and to *overthrow* it [i.e., the city].” Indeed, when they come across Laish, this turns out to be precisely the Danites’ purpose in Judges 18: “to enter, to take possession of the land” (לְבֹא לְרִשֵּׁת אֶת־הָאָרֶץ). The purpose of “spying” and “exploring” the land in v. 2 is probably more complex than simply finding a particular place; it is to prepare for a conquest. [EXPLORE] is slightly preferable.²⁰

²⁰ *Contra* Van Hecke (2003c, 155), who argues for a [SEARCH] sense. I do, however, agree with his [SEARCH] analysis of Ezekiel 39:14.

2.4. *Jeremiah 17:10*

The syntax of this verse involves two complexities. First, while the ETs use English Finite Verbs for חָקַר and בָּחַן, they are BH Participles. Indeed, if the first compound Noun Phrase (אֲנִי יְהוָה “I YHWH”) is taken as the answer to the question at the end of v. 9 (מִי יֵדְעֶנּוּ “Who can understand [the heart]?”), then the rest of the sentence merely expands on this initial identification: “I YHWH, searching the heart, testing the mind.” I have therefore marked חָקַר לֵב as a Transitive Participle Predication; this construction as a whole modifies the topic אֲנִי יְהוָה.²¹

Second, the לֵ-marked Infinitive Predication לָתֵת לְאִישׁ בְּדַרְכּוֹ “to give to each according to his ways” is introduced with the conjunction וְ “and.”²² Both Gesenius (GKC §154 n. 1) and BDB (s.v. וְ 1b) consider the וְ an ‘explicative’ *wāw*, roughly like German *und zwar* or English *and that*. For example, Isaiah 57:11 translates, “Am I not being silent, and that from long ago, and (so) you do not fear me?”

In this case, such an interpretation allows reading the לֵ-Clause as subordinated to the previous statement(s). Thus, along with Andersen-Forbes and the ETs, I treat לָתֵת לְאִישׁ בְּדַרְכּוֹ as modifying both Participle Predications (חָקַר לֵב and בָּחַן בְּלִיּוֹת); semantically, it expresses the purpose of the “exploring” and “testing.”

2.5. *Jeremiah 31:37*

Most commentators and ETs translate the *nip'al* חִקְרוּ as “be explored” or “be searched out” (presumably meaning “be explored completely”) in Jeremiah 31:37.²³ Lundbom (2004) translates “explored to the depths,” and McKane (1996) “plumbed,” though without comment. Whereas most translations treat לְמַטָּה as an Adjective modifying מוֹסְדֵי־אָרֶץ—hence, “the foundations of the earth *below*”—

²¹ Note that this is a different construction from חִקְרוּ אֶפֶל וְצִלְמוֹת in Job 28:3, despite the apparent structural similarity (NP Participle NP). I have marked the construction in Job 28:3 as a Transitive Verb Clause. This difference is indicated by the Andersen-Forbes classifications of the two Participles: “pure verb participle” for חִקְרוּ in Job 28:3, and “noun-verb participle” for חָקַר in Jeremiah 17:10 (see “Participles” in Andersen and Forbes 2006, §II.2).

²² בְּדַרְכּוֹ is the *qere* reading; the *ketib* has בְּדַרְכּוֹ “according to his way.”

²³ So, ESV, NASB, NET, NRSV, NIV; Thompson 1980; Carroll 1986; Holladay 1989; Brueggemann 1991; Matties and Patterson 1997.

the translations of Lundbom and McKane seem to take it as a clausal Adverb: “the foundations of the earth can be explored *downward*.”²⁴ I have followed the former, majority interpretation.

2.6. *Ezekiel 39:14*

The phrase *מִקְצֵה שְׁבַע־חֳדָשִׁים* “from the end of seven months” is difficult. Assuming (with the MT) that it modifies *יִחְקְרוּ* “they will search,” the obvious interpretation is that it specifies the time of commencing the search. However, this seems to clash with v. 12, which says that the “house of Israel” will be burying bodies *שְׁבַע־חֳדָשִׁים* “for seven months.”²⁵ The NET attempts to solve this difficulty by interpreting *מִקְצֵה שְׁבַע־חֳדָשִׁים* in v. 14 as “for seven full months.”

The much simpler solution, however, is to see that there are actually two stages to the burying/cleansing operation. There will be so many dead bodies that, for the first seven months, the burial operation will be carried out by the entire “house of Israel” (v. 12), “all the people of the land” (*כָּל־עַם הָאָרֶץ*, v. 13). In addition, they will set apart special search parties to look for and bury any that were missed—“those that *remain* on the surface of the land” (*אֶת־הַנוֹתָרִים*) (*עַל־פְּנֵי הָאָרֶץ*, v. 14). Even a human bone lying in some remote place must be buried (v. 15), such is the importance of cleansing (*טָהַר*) the land.²⁶ This more careful second stage of “searching” begins only after the general seven-month clean-up is finished.

The occurrence of *חֶקֶר* in Ezekiel 39:14 is noteworthy in that neither an AREA nor a SOUGHT ENTITY is specified. However, both are easily retrieved from the first half of the verse; it belongs in [SEARCH], therefore, with both these FEs omitted by DNI.

2.7. *Psalm 44:22[21]*

Psalm 44:22[21] belongs in the sphere of God’s personal examination of people. Most ETs translate *יִחְקְרוּ־זֹאת* as “have discovered this,” “have found this out,” or similar, but these do not seem to fit with [EXAMINE PERSON]. Is such a translation correct, and if so, what justifies it?

²⁴ Cf. the Andersen-Forbes analysis.

²⁵ This is rightly identified as a “time interval” constituent by Andersen-Forbes.

²⁶ The need to cleanse the land is mentioned three times in vv. 12–16.

Consider first the question of an AREA and/or SOUGHT ENTITY. In context, the verse is shown in (2).

- (2) אִם־שָׁכַחְנוּ שֵׁם אֱלֹהֵינוּ וְנִפְרָשׁ כְּפִינוּ לְאֵל זָר:
הֲלֹא אֱלֹהִים יַחְקֹר־זֹאת כִּי־הוּא יָדַע תַּעֲלָמוֹת לֵב:
“If we had forgotten the name of our God or spread out our hands to a different god, would not God **search** [or discover] this? For he knows the secrets of the heart.” (Ps 44:21–22[20–21])

The Feminine Demonstrative Pronoun זֹאת “this” functions here to refer to the action of forgetting “the name of our God” or worshipping a strange god (v. 21[20]).²⁷ If we wanted to insist that חָקַר *always* profiles a (possibly figurative) AREA, we might argue that the action of v. 21[20] (and thus זֹאת also) is here viewed as a sphere that God “investigates” and comes to know.²⁸ This is highly unlikely given the supporting statement that God knows “the secrets of the heart” (תַּעֲלָמוֹת לֵב). תַּעֲלָמָה connotes something that has been hidden, or that is hidden or secret.²⁹ Thus, in v. 22b[21b], the “heart” is represented as a container in which thoughts and attitudes are concealed. The logic is that if God knows the תַּעֲלָמוֹת לֵב, it would be impossible to keep hidden from him the idolatrous attitude and behaviour described in v. 21[20]. The sense of v. 22a[21a], then, is that God, in his searching examination of his people, would have found this apostasy.

Thus, the Object זֹאת of the חָקַר Transitive Clause corresponds not to an AREA searched, but to a SOUGHT ENTITY—or rather, to the SOUGHT ATTRIBUTE in [EXAMINE PERSON].³⁰ The implicit AREA is the

²⁷ Waltke and O'Connor label זֹאת used in this way as a “neutrum pronoun,” which refers to “an action or circumstance vaguely defined” (*IBHS* §17.4.3b).

²⁸ So *SDBH*, s.v. חָקַר (1c), where Job 34:24 and Psalm 44:22[21] are both glossed “to investigate (a matter in order to find out whether it is true; said of God).” Similarly, Alonso Schökel’s lexicon (1994) glosses this “(un asunto) averiguar, indagar” ([a matter] to inquire into, to investigate).

²⁹ Compare the Verb עָלַם “be concealed” (*nip'al*), “conceal” (*hip'il*), “hide oneself” (*hitpa'el*).

³⁰ The LXX’s use of ἐκζητέω here supports this point. ἐκζητέω is used most frequently to translate דָּרַשׁ “seek, demand, inquire of” (73 times), בָּקַשׁ “seek, require” (22 times), נָצַר “watch over, observe, keep” (10 times, all in Psalms). Thus, ἐκζητέω consistently profiles a SOUGHT ENTITY of some kind. The only other time ἐκζητέω translates a חָקַר term is in Ezekiel 39:14, where neither the AREA nor the SOUGHT ENTITY is instantiated, though both are contextually salient. (The statistical data is according to the CATSS/Tov Hebrew-Greek parallel alignment module [Tov and Polak 1987] in BibleWorks 7.0, taking into account differences between the MT and the LXX *Vorlage* at Amos 9:12 and Deut 12:30.)

speaker and the community (“we”), in the context of God’s moral examination of his people. Most importantly, this is a *resultative* use of חִקֵּר: the Verb is construed perfectly (i.e., the entire process is on view, rather than its internal structure),³¹ and it includes in its profile the successful result of the search. In all this, it parallels the use of חָפֵּשׁ we saw in (37c) on page 232: once again, a perfective construal along with a heightened salience for the SOUGHT ENTITY yields the sense “search and find,” or “discover by searching.”

As I noted in chapter 9 §1.3, it is not immediately clear whether [EXAMINE PERSON]→[LOCATE] or [EXAMINE PERSON]→[BECOME AWARE OF] better describes the complex resultative process, though I suggest the latter is preferable. One difficulty is that the SOUGHT ATTRIBUTE is not actually expressed. I stated above that זֹאת *corresponds to* the SOUGHT ATTRIBUTE, but it does not *express* it. The SOUGHT ATTRIBUTE in [EXAMINE PERSON] here is non-specific: God’s moral search of the human heart aims to ascertain whether any instances of sin (or perhaps, in this context, of apostasy) are present. זֹאת itself refers to a specific, though hypothetical, situation described in the previous verse. The best analysis is that זֹאת belongs primarily in [BECOME AWARE OF]: it expresses the PHENOMENON of which the COGNISER becomes aware in an event of discovery.

The phrase יִחְקֹר-זֹאת therefore produces a fascinating blend of the two frames. The specificity of זֹאת even suggests a metonymic shift of the temporal profile of חִקֵּר, rather than merely an extension, so that the focal point is the discovery event (i.e., “find by searching”).³²

Deciding on the most appropriate frame is not easy. I have placed it in [BECOME AWARE OF], with a link to [EXAMINE PERSON];³³ this, or

³¹ Note that *yiqṭōl* in BH does not always signify imperfective aspect. The label ‘non-perfective’ merely indicates a contrast with perfective *qāṭal*: unlike the latter, *yiqṭōl* does not signify perfective aspect. For instance, according to Waltke and O’Connor “it is time reference that dictates whether the non-perfective conjugation signifies imperfective aspect (as with past or present time) or not (as with future time)” (*IBHS* §20.2h). However, the *yiqṭōl* is also the most common way of expressing irreal mood (*IBHS* §31.4b). Here, the negated rhetorical question (הֲלֹא) and the *yiqṭōl* together indicate the irreal mood; and the context indicates a perfective construal of the Verb.

³² Cf. ch. 9 §3.

³³ In fact, since any of the metaphoric extensions of [SEARCH] could potentially be used in a resultative [BECOME AWARE OF] sense, I have put an Evokes link from the LU [BECOME AWARE OF]. חִקֵּר to [SEARCH], and a more specific Evokes link from the Psalm 44:22[21] annotation to [EXAMINE PERSON].

a complex event frame subsuming both frames, is preferable to [EXAMINE PERSON] alone. At any rate, “discover,” “search out,” “find out,” and even “work out” are all acceptable English translations.

2.8. *Psalm 95:4*

Psalm 95:4 is the sole occurrence of the Noun **מְחַקֵּר** in the MT, and its meaning is not certain. Dahood’s suggestion is the most likely: he translates **מְחַקֵּר־אָרֶץ** as “the recesses of the nether world,” and suggests that **מְחַקֵּר** “probably denotes a region yet to be explored” (Dahood 1968, 352–53). **מְחַקֵּר** belongs together with the sense of **חָקֵר** found in Job 11:7 and 38:16. In each case, the translation “depths” has been suggested by some translations and lexica—a translation which stems from the suggested ‘basic’ or original meaning “be deep” for **חָקֵר**, which in turn can apparently be traced back to S. P. Chajes’s exegesis of the Psalms in light of Job 38:16.³⁴ The basis for this meaning for **מְחַקֵּר/חָקֵר** in these three verses thus rests on the parallels; and while “depths” is possible in each case, the parallelism is by no means compelling evidence.³⁵ Moreover, the meaning “depths” is not reflected in the Versions of any of these verses; for instance, the LXX uses *πέρας* “end, boundary” in Psalm 95:4 and *ἵχνος* “footprint, trace” in Job 11:7 and 38:16, while the Targum in each case has **פִּישׁוּשׁ** “searching,” presumably meaning “place to be searched.” I will take Dahood’s more conservative route, which assumes a link between the more common senses of **חָקֵר** and the less common senses in these instances. In my database, this is expressed by an Evokes relation from the LUs to [EXPLORE].

2.9. *Job 5:27*

I interpreted this above (page 215) as an [INVESTIGATE] use. In addition, the *qal* Verb in the context denotes a completed process, as in “We have investigated this” (NET) or “We have examined this” (NIV).

³⁴ This is according to Tsevat (*TDOT* V.148), who refers to Chajes’s 1913 Hebrew commentary on the Psalms.

³⁵ There is ultimately no convincing etymological explanation. On this, and Tsevat’s own somewhat doubtful suggested original meaning “divide,” see Aitken 2003, 124–25, with whom I concur. *HALOT* refers to the “original” meaning “to be deep” in the main entry on **חָקֵר**, yet seems to waver on its relevance: the main glosses given for the three instances under consideration are “object of searching” (**חָקֵר**) and “investigation” (**מְחַקֵּר**), but the specific translation for each instance uses “depth(s).”

S. R. Driver proposes a different interpretation, by which חִקֵּר here means “arrived at as the result of meditating on our experience” (Driver and Gray 1921, 58). The FrameNet frame for such a sense is [COMING TO BELIEVE], which describes the formation of some belief, usually after a process of reasoning and based on evidence. If this is correct, the complex event evoked is [INVESTIGATE]→[COMING TO BELIEVE]. Moreover, this is not merely a resultative use of חִקֵּר; it also requires a metonymic shift, so that the focal frame is [COMING TO BELIEVE]. This is much like the shift I suggested for Psalm 44:22[21] above, though there the complex event was [INVESTIGATE]→[BECOME AWARE OF].³⁶

One might argue that Driver’s view receives support from the two *singular* deictic elements, זֹאת “this” and the suffixed Pronoun הִיא “it”—that is, that the truths laid out are construed collectively as a discrete entity, discovered and added to the friends’ belief system.³⁷ However, it is equally possible that the truths are construed collectively as an *area*, which is comprehensively explored. Moreover, on Driver’s interpretation the following כִּן־הִיא “it is true” is essentially redundant; on my interpretation it expresses the *result* of the investigation, namely, a claimed knowledge of the veracity of the TOPIC.

2.10. Job 8:8

כִּוֵּן (followed by לֵ) is generally taken to mean here “ascertain, find out” (HALOT, Holladay 2000, s.v. כִּוֵּן), or—in light of a similar construction in Isaiah 51:13—“think on, consider” (NET; Dhorme 1967, 116). Some recommend emending כִּוֵּן to כִּוֵּן “consider,” based on the Syriac. However, Dahood showed a parallelism in Ugaritic between *š’l* and *knn* “to inquire, to ascertain” (Dahood 1965, 329; cf. Michel 1987, 186). I have retained the MT.

³⁶ In FrameNet, [BECOME AWARE OF] and [COMING TO BELIEVE] are quite similar, but the latter involves a more intentional process of reasoning. Moreover, the DISCOVERER in [BECOME AWARE OF] is generally portrayed as a fairly passive or experiential participant in the event, whereas the COGNISER in [COMING TO BELIEVE] is an *agent* in the strongest sense—the purposeful initiator of the process of gaining knowledge. There is, however, considerable overlap between the frames, and in many cases an event of “discovery” may be portrayed in either an active or a passive/experiential way. Similarly, both frames may be evoked as the result of, or subsequent to, a process of investigation.

³⁷ Note that it is by no means unusual for a singular deictic, and particularly זֹאת, to refer to a multitude of ideas or events (e.g., Job 1:22; 2:10–11).

The Suffixed Pronoun ם on אֲבוֹתָם “their fathers” moves the time reference back one generation earlier than דֹר רִישוֹן “the former generation” in v. 8a.

Waltke and O’Connor (IBHS §9.5.2b n. 20) present this verse as an illustration of the subjective vs. objective genitive ambiguity, asking whether it is “an investigation undertaken by their fathers’ (subjective) or ‘an investigation about their fathers’ (objective).” In fact, it is almost universally taken in the subjective sense. However, the content of this past investigation is not yet specified: כִּי “for” at the start signals the beginning of a supporting argument for the preceding assertions, but the content of the argument itself is delayed until verse 11. Before providing this, Bildad identifies it as the wisdom of the “former generation” (דֹר רִישוֹן) and, moving back one generation further, of “their fathers” (אֲבוֹתָם).³⁸

For our purposes, the most interesting question is which frames are evoked by this instance. As most interpreters recognise, חֵקֶר here profiles not simply the *process* of investigation, but more particularly the *topic or content* of that investigation. If we locate it in [INVESTIGATE], then, the target חֵקֶר expresses both the INVESTIGATION and TOPIC—i.e., “that which (they) investigated.”³⁹

A better interpretation, however, takes this instance as both resultative and metonymic (ch. 9 §3.2), whereby חֵקֶר profiles the *knowledge or understanding yielded* by a (complete) investigation. On this verse, Dhorme (1967, 116) comments, “The exact meaning of חֵקֶר is investigation, study (5:9); here, the object and result of such study.” Similarly, Driver and Gray (1921, 50 [Part 2]) understand it as “concrete, *what has been sought out*,” and Pope (1965, 66) as “the results of investigation and experience.”⁴⁰ This interpretation is reflected in several ETs, such as “findings” (NET) or “what (they) have found” (NRSV).⁴¹ Clines’ translation “research” (1989, 206) is particularly at-

³⁸ *Contra* most ETs (e.g., ESV, NASB, NIV, NRSV), which translate דֹר רִישוֹן and אֲבוֹתָם as plural or generic terms (e.g., “past generations,” “the fathers”).

³⁹ If the result of the process is emphasised, we might translate it “that which (the fathers) came to understand.”

⁴⁰ Whybray is one of the few who, perhaps, does not give a metonymic reading here: “These are the sages or wise men of old who by their studies (*hēqer*, literally ‘investigation’) established and caused to be accepted the principle of exact retribution that Job (and so also the author) is questioning” (Whybray 1998, 59–60).

⁴¹ Cf. NET n. 24 at Job 8:8: “The Hebrew has ‘the search of their fathers,’ but the word is probably intended to mean what that observation or search yielded (so

tractive, since the English Noun *research* allows a similar metonymic shift; for example, compare *ongoing research* with *look up the relevant research*.

The key points to note are (1) that the focal area of the temporal profile of חִקֵּר is here neither the process of investigation nor the event of gaining understanding, but rather the subsequent ongoing state of knowledge, and (2) that the focal FEs are the cognitive content understood by the preceding generations, along with the state of understanding. In terms of our frames and complex event patterns (fig. 9.7 on page 218), חִקֵּר here primarily evokes neither [INVESTIGATE] nor [COME TO UNDERSTAND], but rather the stative [UNDERSTANDING] frame that follows both in the event sequence, with both the TOPIC and state of UNDERSTANDING profiled.⁴² Of course, there is undoubtedly a strong link to the investigation that gave rise to this understanding; in my system, this is simply represented with an Evokes link from the LU to [INVESTIGATE].

2.11. Job 11:7; 38:16

In Job 11:7 and 38:16, חִקֵּר displays a metonymic extension from its common sense to “something that requires exploration,” and thus “unknown regions, mysteries, secrets.”⁴³ According to S. R. Driver, “the word (חִקֵּר) ‘means’ properly *something to be searched out or explored*: in 38:16 it is rendered ‘recesses’: and it denotes here the entire range of the divine nature.” He continues: “[The point of the question] is not whether, by a particular *method*, God’s nature can be read by man, but whether its vastness is by any method intelligible to him” (Driver and Gray 1921, 107).

Moreover, it is apparent that the metaphoric mapping [EXPLORE]→[INVESTIGATE] applies also to this extended sense, since in Job 38:16 the חִקֵּר is construed as a remote physical region in תְּהוֹם “the sea,” whereas in Job 11:7 it is used figuratively for the unknown

‘search’ is a metonymy of cause).” The SDBH entry has “= knowledge ◀ gained as the result of study and investigation – *experience, knowledge*.”

⁴² Typical terms in [UNDERSTANDING] include יָדַע “know” and בִּין “understand,” along with the cognate Nouns דַּעַת and בִּינָה.

⁴³ BDB has, for חִקֵּר אֵלֹהִים, “what is to be explored in [אֵלֹהִים], the whole range of his nature.” Michel’s suggestion that it refers to a locality or dwelling (Michel 1987, 257), based on “the Heights of Heaven” and “the Depth(s) of Sheol” in v. 12, is also unlikely. See also my comments on Psalm 95:4 (§2.8).

or unknowable characteristics of אֱלֹהִים.⁴⁴ I have added an Evokes link to [EXAMINE PERSON] for this particular annotation.

2.12. Job 28:3

We observed above (§1.1) that the two uses of חָקַר in Job 28 demonstrate the link between the prototypical physical/experiential sense and one of the most significant figurative senses: that of cognitive investigation of some abstract topic. As is noted by several contributors to van Wolde 2003c, חָקַר thus makes a significant contribution to the comparison on which the whole chapter is based: the exploration of the earth to search for precious material, and the search for and exploration of wisdom.⁴⁵

Verses 3–4 are somewhat difficult structurally, as David Wolfers explains:⁴⁶

The absence of proper parallel in certain verses of Hebrew poetry is, of course, no anomaly in itself; there are scores of verses in the Book of Job which have no trace of parallel. But when we have a poem of twenty-nine verses of which every other is a couplet and almost every other exhibits the simplest form of parallel, the anomaly becomes a real one, as if we were reading a rhymed poem and encountered a verse without rhyme. We should suspect a printing error, as we are entitled to do here. (Wolfers 1995, 495)

Some therefore suggest reorganising the two tricola of verses 3–4 into three bicola (Pope 1965; Gordis 1978; Zerafa 1978; Wolfers 1995), though others are more cautious (Driver and Gray 1921; Dhorme 1967; Habel 1985). Such a reorganisation would not greatly affect my analysis of חָקַר; the AREA explored would be אֶבֶן “stone” alone, and the second bicolon would begin with אֶפֶל וְצִלְמוֹת “darkness and deep shadow.” Nevertheless, I have retained the MT versification, and marked אֶבֶן אֶפֶל וְצִלְמוֹת “stone of deepest darkness” as the AREA.⁴⁷

⁴⁴ The Targum of Job has פִּשְׁפּוּשׁ (or the variant פִּישְׁפִּישׁ). *The Comprehensive Aramaic Lexicon* (Kaufman and Fitzmyer forthcoming) gives two senses for פִּשְׁפּוּשׁ, which show the same metonymy as BH חָקַר: “search, investigation,” and “place to be searched, investigated.” The LXX, however, has ἵχνος κυρίου “footstep/track of God.”

⁴⁵ The LXX differs greatly from the MT, largely for theological reasons (Zerafa 1978, 133–36; Muraoka 2003). This does not undermine the integrity of the MT.

⁴⁶ Cf. also Zerafa 1978, 139–40.

⁴⁷ The Construct-Postconstruct structure can be interpreted in two ways: either אֶפֶל וְצִלְמוֹת describes the *location* of the אֶבֶן (as in most ETs and Andersen-Forbes; cf. NET n. 7 at Job 28:3), or it describes the אֶבֶן itself. I do not share the view of Gordis

S. R. Driver, if the consonantal text is to be accepted, interprets both שם (which he reads as a participle) and חֹקֶר as “describing, by a usage, rare and chiefly late in Biblical Hebrew . . . , a fact liable to *recur*—here, viz., what happens in every mine that is opened” (Driver and Gray 1921, 191). He also maintains that שם, as a participle, can have an unexpressed (“indefinite”) subject.⁴⁸

ETs differ on the relationship of לְכָל־תְּכֵלִית “to every extremity” to חֹקֶר. Some (HCSB, NET, NIV) treat לְכָל־תְּכֵלִית syntactically as the Direct Object of חֹקֶר, and semantically as the AREA searched. אֶבֶן אֶפֶל וְצִלְמוֹת is then an adjunct, specifying the SOUGHT ENTITY. However, חֶקֶר is nowhere else used with a לְ Phrase for the Direct Object and/or AREA, and it is more natural to read לְכָל־תְּכֵלִית as an expression of the EXTENT of the search (so, ESV, NASB, NRSV).

Most ETs are either ambiguous (e.g., “searches out . . . the ore,” ESV), or interpret אֶבֶן as a SOUGHT ENTITY (e.g., “searches . . . for ore,” NIV). In this latter reading, the AREA searched is unspecified, but presumably it is implicitly “the earth” (הָאָרֶץ; cf. v. 5).⁴⁹ While I agree that there is a SOUGHT ENTITY here (i.e., חֶקֶר evokes [SEEK SCENARIO] rather than merely [EXPLORE]), it is more likely that אֶבֶן specifies the AREA, with the SOUGHT ENTITY left implicit. The valuable sought materials have already been indicated: בְּרִזָּה “iron” and נְחוֹשֶׁה “copper” (v. 2), and perhaps also כֶּסֶף “silver” and זָהָב “gold” (v. 1). In verse 4, however, the focus has shifted to the places to which people go, rather than the precious items sought. Moreover, in verse 2, עֲפָר “soil” and אֶבֶן in parallel are depicted as the sources of בְּרִזָּה and נְחוֹשֶׁה; and in verse 6 we are told that “the rocks” of the earth (אֲבָנֶיהָ) are “the place of sapphire” (מְקוֹם־סַפִּיר). Thus, the אֶבֶן is seen in verse 3 as the source of the precious materials, and thus the AREA searched.

Finally, the HCSB follows Habel’s interpretation of חֶקֶר here as “penetrating” or “probing” (Habel 1985, 396); but there is little to indicate this specialised sense.

(1978, 305) and Wolfers (1995, 495–96) that אֶבֶן אֶפֶל וְצִלְמוֹת means “lava” here. The idea that אֶפֶל might mean, or at least have a significant folk etymology, “shadow of death” is likely; cf. Thomas 1962; Sawyer 1972; Wolfers 1995, 499 n. 25; TWOT, s.v. צִלָּה; HALOT, s.v. צִלְמוֹת.

⁴⁸ Driver’s discussion of the difficulties with הוּא should also be noted—though these are not solved by any simple emendation, and I will interpret the text as it is.

⁴⁹ לְכָל־תְּכֵלִית is not the AREA searched, but the EXTENT to which it is searched. Including the AREA would require a phrase such as לְכָל־תְּכֵלִית הָאָרֶץ (cf. other Construct-Postconstruct expressions with תְּכֵלִית Job 11:7; 26:10; Ps 139:22; Neh 3:21).

2.13. *Job 28:27*

The four Verbs in Job 28:27, especially the second and third, have been the subject of much discussion and speculation. The difficulties are mainly interpretive ones; for instance, the *pi'el* of ספר most often means either “count” or “tell, declare,” neither of which seems entirely suitable.⁵⁰ An attractive solution for ויספר here is “and he appraised/evaluated it,” an extension of the idea of “counting” (Pope 1965; Dhorme 1967; NIV; ESV; HCSB). Nevertheless, “declared” is not as inappropriate as some commentators suggest (*contra* Harris 1983, 419): even if the intended recipient of this declaration could not sensibly be humanity, there is no reason why it *need* be humanity, particularly given the heavenly assembly that appears in the early narrative section of Job (1:6, 2:1).⁵¹

Some commentators also find הִכִּינָה “he established it” difficult to fit into the context, and recommend the alternative הִבִּינָה “he discerned it,” which has very little manuscript support.⁵²

However, the text is well able to be interpreted as it stands, as S. R. Driver showed: wisdom in Job 28:27 is

a concrete object, or, as we should say, an idea of wonderful complexity, which, at the Creation (v. 26), God “saw,” “recounted,” or surveyed in all its parts, “established,” or set up, as though it were a model, “searched out,” or thoroughly explored, and finally realized in the universe of created things. (Driver 1908, 81, cited in Driver and Gray 1921, 243)

⁵⁰ Scott Harris summarises the perceived difficulties well: “For one, the second verb *way'sapp'rāh* cannot mean that God ‘declared it’ (wisdom) to man as the Piel form suggests. As R. Gordis notes, ‘it is precisely the unavailability of Wisdom to man that is the theme of the poem’ [Gordis 1978, 311]. To change *way'sapp'rāh* to a Qal form meaning ‘to count,’ ‘to number’ does not help. It is difficult to understand what it means for God to count or to number wisdom when by definition this wisdom is monotypic” (Harris 1983, 419).

⁵¹ In fact, *contra* the quote from Gordis in the previous footnote, this poem does not set out to show “the unavailability of Wisdom to man.” On the contrary, “wisdom,” or at least the most significant aspect of the limited type of wisdom which is appropriate to people, is precisely what God reveals to humanity in verse 28. What the poem sets out to show is the inability of people to gain access to wisdom through their own striving and cleverness; it can only be gained by humbly accepting God’s revelation—a theme which is entirely in accord with the idea that God “declared” wisdom to humanity in verse 27.

⁵² Zerafa (1978, 152–53) maintains that the LXX is responsible for הִבִּינָה—a word with an “operative connotation” that does not fit the “cognitive activity” of the other Verbs.

As we saw in §1.1, given the nature of חִכְמָה “wisdom” and the imagery of vv. 20–27, verse 27 blends the notions of physical and mental exploration. In my annotation, I have included חִקֵּר here in [INVESTIGATE], but the annotation is linked also to [EXPLORE] via an Evokes relation. Moreover, as is implied in the quote from Driver (“thoroughly explored”), חִקְרָה here has a completive sense.⁵³

2.14. Job 32:11

When Elihu complains that he has listened in vain while his elders “searched (for) words” (עֲדַת־חִקְרוֹן מְלִין, Job 32:11), does he mean that they were searching *for* the right words in some abstract AREA, such as their minds? ETs tend toward this interpretation. The alternative, which finds support in the LXX, is that (according to Elihu) they were merely *exploring* words, mouthing platitudes in long speeches with no real aim or insight. This would have greater ironic impact, and perhaps fits the situation better: the three friends have hardly been searching for words to speak!⁵⁴ There has been no shortage of utterances; but, according to Elihu, the speeches thus far have contained no “understanding” (תְּבוּנָה) whatsoever.

2.15. Proverbs 23:30

A number of the occurrences of חִקֵּר in Proverbs are difficult to analyse semantically, for the simple reason that proverbs are often intentionally thought-provoking; and one of the ways to make a maxim thought-provoking is to leave it semantically underspecified or ambiguous. Moreover, proverbs often have minimal context.⁵⁵

Though some translations render בָּאִים לְחַקֵּר מִמֶּסֶךְ in Proverbs 23:30 as “those who go looking for mixed wine” (HCSB; NET; BDB), it

⁵³ Whybray (1998, 124) explains חִקֵּר in both Job 28:27 and Jer 17:10 as meaning “to have a complete knowledge of something.” This may be an implication of the fact that it is God/יְהוָה who is the investigator in each case, but it is not necessarily the sense of the word itself.

⁵⁴ In the more common interpretation the idea that they were searching for words *of a certain kind*—words that were true, or helpful, or convincing—must be implicit.

⁵⁵ We must be somewhat cautious with using the LXX to assist us in Proverbs. Barr notes that the LXX translator of Proverbs “was, at least in a certain sense, a somewhat free translator: he was capable at times of producing as a rendering an attractive Hellenistic-Jewish sentiment, which nevertheless had only limited contact with the exact wording of the Hebrew” (Barr 1975, 158).

is better understood figuratively, with a substance-for-property metonymy: “those who explore (the taste of) mixed wine” (ESV; NASB; NIV; NRSV; HALOT; TDOT; Zorell 1984). This develops the idea of “those who linger over wine” (מֵאֲחֵרִים עַל־הַיַּיִן) in verse 30a. If “search for” were the sense, we would expect the reverse order for the progression of ideas, as in, “those who search for . . . , who linger over.”

2.16. Proverbs 25:2

Glendon Bryce (1972) convincingly demonstrated that Proverbs 25:2–27 is a self-contained “book” of proverbs, whose themes are, first, the relation between the king and his subjects (vv. 6–15), and second, the wicked (vv. 16–26). These themes are introduced in verses 2–3 and verses 4–5, respectively; and verse 27, however it is to be read, picks up key terms related to each theme (cf. v. 2, v. 16).⁵⁶

Within this little “book,” חָקַר terms appear in each of the first two verses and in the final verse.⁵⁷ Verses 2 and 3 describe the fundamentally asymmetrical nature of the relationship between מְלָכִים and their subjects: kings, in governing their subjects, have the “glory” or honour (כְּבוֹד) of “investigating a matter” (חָקַר דָּבָר); on the other hand, the hearts of kings are beyond investigation (אֵין חֶקֶר) by those under their authority.

ETs are, once again, unhelpful in translating חָקַר דָּבָר somewhat ambiguously as “to search out a matter” (NASB, NET, NIV, ESV, NRSV). The HCSB’s “to investigate a matter” is more precise, and rightly identifies [INVESTIGATE] as the appropriate frame, rather than, for instance, [SEEK] or [SEEK TO KNOW].⁵⁸ דָּבָר is thus the TOPIC investigated. Tsevat (TDOT V.149) probably interprets דָּבָר too specifically, as “legal cases”; but these are no doubt included.

The contrast between the two cola is therefore far more nuanced than a simple opposition.⁵⁹ This is not surprising: there are significant parallels between God and the king in their governing roles, but their “glories” are of different orders.

⁵⁶ Cf. also Van Leeuwen 1986, 112.

⁵⁷ V. 3 is a negated occurrence, and so will be treated in the following sections.

⁵⁸ *Contra* Crenshaw 1998, 47, 117.

⁵⁹ A strict opposition would require a different Verb in the second colon, such as גָּלָה “uncover, reveal.”

2.17. *Proverbs 25:27*

Proverbs 25:27 is one of the most difficult חֶקֶר verses to interpret, and many commentators feel compelled to emend the text in some way. There are, moreover, significant differences between the MT and the Versions.⁶⁰ BHS, for instance, declares the second colon corrupted, and proposes two alternatives. As Van Leeuwen (1986, 107) notes, Bryce's discovery of the relationship between verses 2 and 27b was a major step towards deciphering the latter; but the task is still by no means simple.

There are three main difficulties with verse 27b in the MT. First, should כְּבוֹדָם “their glory” be repointed to the plural substantive כְּבוֹדִים “difficult things”—a pointing supported by the LXX's λόγους ἐνδόξους “glorious things”?⁶¹

Second, if we keep the MT כְּבוֹדָם, what is the antecedent of the 3MPL suffixed Pronoun “their”? Is it אֱלֹהִים and מַלְכִּים in verse 2, which is a large gap, notwithstanding the inclusio; or is there in fact no antecedent, with the implication that the investigators' own glory is intended (so, most ETs)?

Lastly—and most importantly—does the negative לֹא in the first colon implicitly carry over to the second, modifying כְּבוֹד, so that the Predicate of the second colon should be rendered “is *no* glory”? The ‘double-duty’ negative is well recognised in BH, and the vast majority of modern translations treat Proverbs 25:27 as an instance. However, there are two factors weighing against it in this case. First, in all the instances of a double-duty negative listed in GKC §152z, the negative is Clause-initial, or follows only a Clause-level modifier like כִּי or אֲף. Proverbs 25:27 would be unique, in that לֹא modifies the Predicate טוֹב, which follows the Subject (as does כְּבוֹד in the second colon). Second, as Bryce observed, in verses 2–26 every statement is “qualified by what follows The positive statements are qualified by negative ones, and vice-versa” (Bryce 1972, 152–53). We are there-

⁶⁰ See Van Leeuwen 1986 for a detailed account of these differences. Note that the LXX's τιμᾶν “to honour” is a misreading of וַחֲקֹר as וְהִקֵּר (*hi.* of יָקַר)—a misreading corrected in the *Peshitta* and the Targum (cf. Van Leeuwen 1986, 106–8).

⁶¹ The pointing כְּבוֹדִים “glorious things” is very unlikely. Nevertheless, Van Leeuwen argues that the LXX, in translating כְּבוֹדִים with λόγους ἐνδόξους, consciously reverses “difficulties” to “glories” in an attempt to deal with “what is in Hebrew a punning ambiguity (glory/difficulty)” (Van Leeuwen 1986, 113). This is entirely plausible, given the link—especially in the LXX—between verses 2 and 27.

fore led to expect the same pattern in verse 27, so that the entire “book” ends with a positive colon.⁶²

Weighing all these considerations, I lean towards Bryce’s solution, reading כְּבִיד, and with a contrastive relation between the two cola. The verse may then be translated, “To eat much honey is not good, but to investigate difficult things is glorious”—though this inevitably misses the punning link between כְּבִיד “heavy, difficult” and כְּבוֹד “glory” (cf. v. 2).

Fortunately, these problems do not have too great an impact on a frame-semantic analysis and annotation of חֲקֹר here: the Noun clearly has an [INVESTIGATE] sense, and כְּבִיד, however it is pointed, is the TOPIC of investigation. However, if ם is a suffixed Pronoun (with the MT), then it presumably indexes the INVESTIGATOR; if it is a plural morpheme, as I take it, the INVESTIGATOR is omitted by INI.

2.18. Proverbs 28:11

The traditional understanding of יִחְקְרֵנוּ here is “see through him,” that is, see through the pretensions of the rich person to their profound failings. This falls into my [EXAMINE PERSON] frame, with an implied successful result: the “understanding poor person” (דָּל מְבִין) examines the proud rich person, gaining a true and damning knowledge of their folly (so, NET “evaluate him properly”).

D. Winton Thomas challenged this understanding of יִחְקְרֵנוּ. Based on an Arabic root, and with the support of the Targum, the *Peshitta*, and possibly the LXX, he suggested that חֲקֹר here is a distinct word meaning “despised” (Thomas 1937, 402–3).⁶³ This is speculative. Not only is the traditional interpretation unproblematic, but it produces a more thought-provoking proverb than Thomas’s alternative.

2.19. Ecclesiastes 12:9

In Ecclesiastes 12:9, וְאִזֵּן וְחֲקֹר תִּקֵּן מְשָׁלִים הָרַבָּה “and he weighed and explored, he set in order many proverbs” presents a syntactic problem: Should we read this as three Transitive Clauses, which all share

⁶² Van Leeuwen (1986, 112–13), unlike Bryce, takes לֹא to be a double-duty negative here; otherwise, their interpretations are identical.

⁶³ The LXX has καταγνώσεται (= καταγινώσκει) “condemn,” “curse,” or “disapprove” (cf. Lust, Eynikel, and Hauspie 1992), though Aquilla and Theodotion have ἐξεχνιάζω “explore, trace, search out” (cf. Judg 18:2; Job 5:27).

מִשְׁלִים הָרַבָּה as their Direct Objects?⁶⁴ Or are וְחִקַּר and וְאָזַן two Intransitive Clauses? The Andersen-Forbes analysis opts for the latter, but most interpreters imply the former; for instance, “he weighed, explored, and arranged many proverbs” (HCSB).⁶⁵

Weighing against a shared element in this case is the lack of a conjunction on תִּקֶּן. On the other hand, וְאָזַן וְחִקַּר is clearly a hendiadys (IBHS §32.3), given the *wəqāṭal* form וְחִקַּר and the semantic similarity of אָזַן and חִקַּר (though from different source domains).⁶⁶ This probably explains the asyndetic תִּקֶּן.

The decision may impact interpretation slightly. If מִשְׁלִים הָרַבָּה is a shared Direct Object, both activities (counting וְחִקַּר וְאָזַן as one) relate directly to מִשְׁלִים: Qohelet is the evaluator and arranger of proverbs. If not, וְאָזַן וְחִקַּר could describe a more purely mental activity of reflecting on matters of wisdom; the setting out of proverbs flows from this activity.

The following verses (vv. 10–12) support the first option: Qohelet seeks “to find words of delight” (לְמַצֵּא דְבָרֵי-חֵפֶז), and reference is made to “collections” (אֲסֻפּוֹת) of the “words of the wise.”⁶⁷ I have therefore treated מִשְׁלִים הָרַבָּה as a shared element.

Finally, what is the force of the *pi’el*? Does it connote intensity, a resultative sense,⁶⁸ or some other idiosyncratic modification to the sense of the *qal*? Without any other occurrences of the *pi’el*, this is difficult to ascertain with any certainty. Tsevat’s suggestion that it “probably means ‘scan (verse)’” has weak external support, and has little to commend it in the context; the hendiadys is difficult to interpret with this reading. The choice of the *pi’el* is quite possibly influenced by the other two *pi’el* Verbs, and the [INVESTIGATE] frame seems a natural choice.⁶⁹

⁶⁴ Andersen and Forbes (2003, §4.2; 2006, §III.1) call this situation “multidominance,” but in line with RCG I will speak of shared elements. Fillmore (2006) has suggested the term “Shared Completion Construction.”

⁶⁵ Cf. other ETs; HALOT; BDB; TWOT, s.v. חִקַּר.

⁶⁶ The NET renders this hendiadys “he carefully evaluated.”

⁶⁷ Cf. Wilson 1984, 176–77.

⁶⁸ On the differences between Anstey’s and Waltke and O’Connor’s views on the function of the *pi’el*, see ch. 1 §6.

⁶⁹ Crenshaw (1998, 117) argues for a [SEEK] sense, claiming support from “sought to find” (לְמַצֵּא . . . בִּקֵּשׁ) in verse 10. However, the collocation וְאָזַן וְחִקַּר is far more important; and an [INVESTIGATE] sense in verse 9 is entirely compatible with verse 10, given a slight shift in imagery.

3. Negated instances: General considerations

There is a range of expressions by which חָקַר is negated in the HB, namely, the negated Noun אֵין חָקַר or לֹא-חָקַר, and the negated *nip'al* Verb, both Perfective (*qāṭal*) לֹא נִחְקַר and Nonperfective (*yiqṭōl*) לֹא יִחְקַר. These expressions present particular syntactic and semantic problems. I will discuss two pertinent issues: the uses of אֵין in BH syntax, and the Versional translations of negated חָקַר instances.

3.1. Uses of אֵין in BH

The uses of אֵין (or אֵין in the Absolute) are many and syntactically varied.⁷⁰ To begin with, I propose that we must distinguish between two varieties of אֵין as a clausal element, namely, אֵין as the predicator of non-existence (“there is no”) in a negative Existence Clause, and אֵין as a simple negator (“is not”) in other nonverbal Clauses (cf. *IBHS* §8.4.2). GKC (§152l) affirms this distinction: “The construct state אֵין stands in its natural position immediately before the substantive whose non-existence it predicates, or before the subject of the sentence which is to be negated.”⁷¹

In the latter case, the removal of אֵין will generally leave a positive counterpart Subject-Predicate clausal structure. Compare, for instance, the contrasting injunctions of Leviticus 13:3 and 4:

- (3) a. וּמִרְאֵה הַנֶּגַע עֲמַק מֵעוֹר בְּשׂוֹר
 . . . and the appearance of the infection [is] deeper than the skin of his body . . . (Lev 13:3)
- b. וְעֲמַק אֵין-מִרְאֵה מִן-הָעוֹר
 . . . and its appearance **is not** deeper than the skin . . . (Lev 13:4)

In each of these instances, according to the standard terminology, there is both a Subject (מִרְאֵה הַנֶּגַע / מִרְאֵה) and a (Subject) Complement (עֲמַק מֵעוֹר בְּשׂוֹר / מִן-הָעוֹר . . . עֲמַק). The difference is merely the inclusion of אֵין in Predicate of the second.^{72, 73}

⁷⁰ See particularly the detailed data in GKC §152i–p and BDB, s.v. אֵין II.

⁷¹ The examples in *IBHS* §39.3.3b include both types of construction.

⁷² As is noted in the grammars, the most common subvariety of אֵין as a simple negator is that in which it “negates the event to which a *participle* refers” (*BHRG* §42.2, emphasis original; cf. GKC §152l, *IBHS* §37.5f).

⁷³ As used here, the traditional terms ‘complement’ and (even more) ‘subject complement’ do not sit very easily with the Cognitive Grammar and RCG reanalysis

In contrast, an Existence Clause consists solely of the Subject and either an existence marker (such as **יֵשׁ**) or a non-existence marker (such as **אֵין**).⁷⁴ In such a Clause, **אֵין** (or NEG.EXIST) is the Predicate; if it is removed, the construction ceases to be a Clause. Compare, for instance, the negative statement in Isaiah 44:6 with the positive question in verse 8, as well as a malformed version of the latter:⁷⁵

- (4) a. **וּמִבִּלְעָדִי אֵין אֱלֹהִים**
 ... and besides me **there is no** god. (Isa 44:6)
 b. **הֲיֵשׁ אֱלֹהִהּ מִבִּלְעָדִי**
Is there a god besides me? (Isa 44:8)
 c. * **הָאֱלֹהִהּ מִבִּלְעָדִי**
 *[Is] a god besides me?

Existence Clauses, both positive and negative, have a more specific subtype: the Possession Clause, which, along with an existence particle (**יֵשׁ**, **אֵין**, or **הִיָּה**), contains a $\dot{\text{ל}}$ -PP specifying the Possessor, as in (5a).⁷⁶ In fact, this structure is used more broadly for specifying the *scope* of a statement of existence/nonexistence. A straightforward example, shown in (5b), occurs with **חֶקֶר** in Psalm 145:3.⁷⁷

- (5) a. **וְלָרֶשׁ אֵין-כֹּל כִּי אִם-כֶּבֶשׂה אַחַת קֹטְנָה**
 ... but **to the poor man there was not** anything except one small ewe lamb ... (2 Sam 12:3)
 b. **וּלְגִדְלָתוֹ אֵין חֶקֶר**
 ... and with respect to his greatness there is no searching. (Ps 145:3)

of complements, etc. Semantically, the subject in a nonverbal clause usually does not need completing: it is very often autonomous rather than dependent (in Langacker's sense). Nevertheless, 'complement' is the most widely used term; and it is better interpreted at a constructional level: the complement is the element required to complete the clause itself. In my system of CTs, I have adopted 'Clause Complement.'

⁷⁴ As with all such labels, 'Subject' is primarily a mnemonic device. Other labels are possible, such as 'Theme' (Falk 2004) or 'Pivot' (Francez 2006). In English, existential predications are expressed by constructions with the non-referential 'existential' *there* (e.g., *there is no investigation*).

⁷⁵ Cf. also Isaiah 43:11; Psalm 58:12[11].

⁷⁶ Cf. also Gen 11:30; Exod 22:2; Lev 11:10–11; 22:13; Num 5:8; Deut 12:12; etc. Not surprisingly, the same holds for positive constructions with **יֵשׁ**: it can be used in either a simple Existence Clause or in a Possession Clause (e.g., Gen 33:9; 39:4–5; 2 Kgs 4:2; Job 38:28; Ruth 1:12; 1 Chr 29:3).

⁷⁷ Cf. also Deut 22:26; 28:32; 1 Sam 27:1; Isa 9:6[7] (*qere*); Ezra 9:15; Jer 8:17; Ps 147:5. In Andersen-Forbes, **לְגִדְלָתוֹ** is labelled 'Possession,' but a better label would be 'Referential' (cf. **לְתִבְּנֹתוֹ** in Psalm 147:5).

For a true possessive construction, then, the scope is the possessor (or their belongings/resources); more generally, it is the sphere, whether spatial, temporal, or otherwise, in which a statement of existence or non-existence holds.⁷⁸

The issue of coordination/subordination is more difficult. GKC (§152l) cites וַאֲזַן מִצִּיל in Isaiah 5:29 and Psalm 7:3 and וַאֲזַן מַחֲרִיד in Leviticus 26:6 as examples of “וַאֲזַן with a participle in subordinate *circumstantial or descriptive clauses*” (emphasis original); וַאֲזַן חֶקֶר in Job 5:9 would fall into the same category. If such a description is appropriate, it may warrant analysis in terms of clause sequences and text organisation; for instance, in Isaiah 5:29 the וַאֲזַן clause breaks a sequence of *yiqṭōl* (NPRF) Verb Clauses.⁷⁹

Along with these clausal uses of וַאֲזַן, there are adjectival uses, in which an וַאֲזַן construction directly qualifies a preceding NP. Such Phrases are also usually existential, in that they describe the non-existence of an attribute for the NP. Such a construction may have a resumptive/anaphoric pronoun (6a), though there may be none (6b).

(6) a. אִם-כֶּלִי אֵין חֶפֶץ בּוֹ

... or a vessel there-is-no delight in it [i.e., a vessel in which no one takes delight]? (Jer 22:28)⁸⁰

b. וְעַמִּי שָׁכַחוּנִי יָמִים אֵין מִסָּפֶר

But my people have forgotten me days there-is-no number. (Jer 2:32)⁸¹

⁷⁸ The ‘scope’ of an existential expression is similar to Itamar Francez’s proposed ‘domain of quantification’: “My suggestion is that the pivot [i.e., Subject of an existential construction] is a predicate of a contextually determined domain of quantification” (Francez 2006, §3.4). In BH, expressions of scope with וַאֲזַן may be headed by prepositions other than לְ, namely, בְּ (Jer 38:6; Eccl 7:20; 2 Chr 15:5) or מִן (Isa 63:3).

⁷⁹ The traditional approach to BH syntax would describe this as a ‘logical’ subordination or dependence (e.g., *IBHS* §138.1). However, those who seek to apply principles of text linguistics (discourse analysis in North America) claim more. Robert Longacre (1989, 1996; Longacre and Hwang 1994) and Alviero Niccacci (1994, 1997), despite the vast differences between their systems, both relate semantic subordination to the difference between foreground (mainline) and background (more or less off-the-line) sentence types. This issue is beyond the scope of this study. At present, the Andersen-Forbes database uses a narrower definition of syntactic dependence or subordination (e.g., וַאֲזַן חֶקֶר in Job 5:9 is coordinated with עֲשֵׂה גְדִלוֹת), and in WIVU most of the work of combining clauses into larger “sentence” units has been “post-moved to a later phase of data production” (Talstra and Hardmeier 2004, §2.3.1).

⁸⁰ Cf. Jer 48:38 & Hos 8:8; Zech 9:11.

⁸¹ Cf. Isa 33:19; Ps 88:5; Song 6:8; 1 Chr 22:16.

In Andersen-Forbes, such adjectival אֵין constructions are marked as “Nominalized” Phrases, much like Relative Clauses with אֲשֶׁר.

Finally, a significant semantic characteristic of אֵין is its use in existential Clauses/Phrases with Verbal Nouns, particularly *fientive* terms. This includes not only fientive Participles or Infinitives, but also Nouns proper that denote activities, such as חִקֵּר.⁸² In some such cases, the construction connotes the idea of *impossibility*; more specifically, it signifies that the action cannot or may not be effected by some contextually salient agent—often the most general agent (“no one”).⁸³ This connotation is not always contextually appropriate;⁸⁴ but it is more natural with אֵין (NEG.EXIST) than with לֹא (NEG).⁸⁵ Thus, consider the phrase אֵין בִּינָה “without understanding” in Isaiah 33:19:

- (7) עַם עִמְמִי שָׁפָה מְשֻׁמוֹעַ נִלְעַג לְשׁוֹן אֵין בִּינָה
 ... a people too unintelligible in language to hear [i.e., understand],
 stammering of a tongue **that none can understand** [literally, there-is-no understanding]. (Isa 33:19)

Here are two parallel structures, a comparative with מִן and a qualifying אֵין Phrase, both of which convey the idea of impossibility.

This overview of אֵין will be important when we come to analyse, for instance, חִקֵּר in Proverbs 25:3.

3.2. Negated חִקֵּר occurrences in the Versions

One reason for considering the negated חִקֵּר occurrences as a group, even if they are not all the same in meaning, is that in some cases the Versions adopt a sense like “without limit.” If this translation is valid, it makes for an interesting metonymy: an abstract entity or collection of things may be portrayed as too large and extensive to explore completely (and thus not completely knowable), so that its boundaries are

⁸² Of course, such Nouns generally have a semantic and formal relation to a fientive Verb. By ‘fientive,’ I mean LUs that describe an activity (as opposed to a state), rather than *forms* that are typically non-stative (cf. *IBHS* §20.2k n. 14). On Verbal Nouns, see *GKC* §§81–85. Note that Waltke and O’Connor’s use of the term ‘Verbal Noun’ differs from that of Gesenius; yet their uses are complementary, and I have combined them to include Participles, Infinitives, and deverbal Nouns.

⁸³ “Cannot” and “may not,” respectively, imply epistemic and deontic modality; cf. Lyons 1995, 330.

⁸⁴ E.g. 1 Kgs 18:29; Prov 28:24.

⁸⁵ Jack B. Scott, in *TWOT* (s.v. אֵין), lists “impossibility” as one of the usages of אֵין, citing Job 5:9 as an example; cf. also Ps 146:3; Prov 25:28; Isa 33:19; Jer 8:17.

beyond reach; this develops into an entrenched sense “unknowable” or “indeterminable,” or even further, “limitless, never-ending.”

For convenience, the basic data from the LXX, the Targumim and the Vulgate is presented in table 10.3 on pages 274–75.

What do we make of this data?⁸⁶ First, the Targumim are the most consistent in translating negated חקר occurrences with לית סוף “there is no end.” This, or some variation, is used in every case except Proverbs 25:3, and סוף is never used in non-negated occurrences.⁸⁷

The LXX and Vulgate show more variety. They agree in using a “no end/limit” translation in two places: Job 36:26, describing (the greatness of) the number of God’s years (ἀριθμὸς ἐτῶν αὐτοῦ, *numerus annorum eius*), and Psalm 145:3 (though not in Jerome), describing γῆνῃς greatness (μεγαλωσύνης, *magnitudinis*). The LXX uses a similar interpretation for the parallel verses concerning the weight of the bronze used in the temple vessels (1 Kgs 7:47 [LXX 7:32]; 2 Chr 4:18).

Elsewhere, the LXX and/or Vulgate interpret negated חקר in terms of (cognitive) seaching/exploring. Isaiah 40:28, Jeremiah 46:23, Job 5:9, and Job 9:10 all fit this category, as does Proverbs 25:3—though here the term ἀνεξέλεγκτος in the LXX is a little unexpected.

The versional translations may be considered in three groups, according to the basic idea expressed:

1. The impossibility of exploring, examining, discovering, or knowing something, or (occasionally in the Vulgate) the impossibility of counting/weighing something
2. Being “without limit”
3. The fact of not knowing something

Consider the first group. If we accept that the default construals of all the חקר terms are similar to the English “explore” or “exploration,” then translations such as ἀνεξιχνίαστα and *inscrutabilia* (“unsearchable, inscrutable”) for negated expressions remain closest to these default construals. As we saw above, the notion of impossibility is often implied in the negation of terms like חקר, particularly with אין, in an appropriate context. Nevertheless, even a simple phrase such as “cannot be explored” has at least two potential interpretations, depending

⁸⁶ I have included neither the LXX nor the Vulgate of Job 34:24 in the following analysis, as they do not correlate closely enough with the MT.

⁸⁷ The Targumim also use לית סוף for MT אין קץ/קצה “there is no end,” לְבִדְיָחַק “without limit/measure,” and (in 2 Chr 24:10) עַד-לְכֹלָה “until finished.”

on the implicit reason for the impossibility: (1) an AREA or TOPIC is totally inaccessible to the implicit EXPLORER/INVESTIGATOR, so that the process of exploration cannot even be undertaken, or (2) an AREA or TOPIC cannot be explored *completely*, presumably because of its size or complexity. In this second sense, the negation applies not to the process of exploring itself, but to the completive (perfective) aspect, that is, to the attainment of the end of the process.⁸⁸ The difference between these, roughly speaking, is the difference between “inscrutable” and “incomprehensible.” This ambiguity exists in BH and all the target languages, and can only be resolved by contextual indicators, including broad theological themes.⁸⁹

A translation such as *inconprehensibilia* “incomprehensible” is somewhat further from the default construals of חִקֵּר, in that it involves a shift in temporal profile (or scope) within a complex event structure. It evokes not primarily the [INVESTIGATE] frame (or similar), but a resultant frame in a complex process, such as [COME TO UNDERSTAND], or even further, [UNDERSTAND]. Even if the translator’s interpretation incorporates the initial [INVESTIGATE] frame, as in “comprehend (fully) through investigation,” the focal point of the translation is in the resultant frame, and the negation also applies to this “comprehending” event/state.

The second group of versional translations is the farthest removed from the default construals of חִקֵּר terms, but these provide perhaps the strongest support for Van Hecke’s proposed sense “determine the extent of.”⁹⁰ These translations are logically connected both to the idea of impossibility and to a completive construal: if a field of understanding (e.g., Ps 145:3, construed spatially) or a quantity of material (e.g., Job 36:26; 1 Kgs 7:47; 2 Chr 4:18) is limitless, then it cannot be explored completely. Conversely, if an AREA/TOPIC is too large to explore completely, then to the EXPLORER it is effectively boundless.⁹¹

⁸⁸ Cf. ch. 9 §3.

⁸⁹ For instance, in Job it could be argued that, with respect to God, אֵין חִקֵּר (5:9; 9:10) has the former meaning, since the book as a whole focuses on God’s transcendence and inaccessibility: his ways are impenetrable, beyond the gaze and scrutiny of mere mortals; e.g., Job 37:23.

⁹⁰ See p. 218 above.

⁹¹ Of course, the various expressions for “without limit” are *expressed* absolutely, rather than relative to the EXPLORER’s capabilities. Nevertheless, they are best taken as instances of hyperbole. For example, in 1 Kgs 7:47 the LXX translators can hardly have believed that the weight of the bronze was actually infinite.

Table 10.3 Negated occurrences of חקר in the Versions

	TOPIC/AREA	LXX	Targumim	Vulgate
אִי חִקְרָה				
Ps 145:3	YHWH's greatness	ὁὐκ ἔστιν πέρας end/limit	לִית סוּף "there is no end"	<i>non est finis</i> "there is no end/limit"; but Jerome <i>non est inventio</i> "there is no discovering"
Job 5:9	God's deeds	ἀνεξιχνίαστα unsearchable	לִית סוּף, or לִית סוּכּוּם "there is no number"	<i>inscrutabilia</i> "inscrutable, unsearchable"
Job 9:10	God's deeds	ἀνεξιχνίαστα	דלִית סוּף	<i>incomprehensibilia</i> "incomprehensible"
Prov 25:3	a king's heart	ἀνεξελέγκτος "unable to be examined, unquestionable"	מִן מַתְבִּינִי "beyond investigating," or מִן מַתְבִּינִי "beyond examining"?	<i>inscrutable</i> "inscrutable, unsearchable"
Isa 40:28	YHWH's understanding	οὐδὲ ἔστιν ἐξέρεσις no searching / finding out	לִית סוּף	<i>nec est investigatio</i> "nor is there searching / investigation"

לֹא-חֶקֶר				
Job 34:24	the mighty (in judgment; Versions differ)	(ἀνεξχνίαστα?)	לֹא סוֹף (Qumran Job; Targum Job greatly expands the MT)	<i>innumerable</i> “countless” (but also interprets סֹפֵר as <i>multos</i> “many”)
Job 36:26	the number of God’s years	ἀτέραντος “endless, limitless”	לִית סוֹף	<i>inaestimabilis</i> “inestimable”
לֹא נִחְקֶר				
1 Kgs 7:47	the weight of the bronze	οὐκ ἦν τέρμα “there was no end”	לִית סוֹף	<i>non erat (pondus æris)</i> “the weight of the bronze was not”; i.e., “could not be weighed”
2 Chr 4:18	the weight of the bronze	οὐκ ἐξέλιπεν “did not fail/cease”	לִית סוֹף	<i>ignoraretur</i> “was not known”
לֹא יִחְקֹר				
Jer 46:23	Egypt’s forest? the invading army?	οὐ μὴ εἰκασθῇ “cannot be imagined / guessed”	לִית לְהוֹן סוֹף	<i>qui supputari non potest</i> “which cannot be counted”

The third group of translations, unlike the first two, simply predicates the historical fact that something was not sought/ascertained, rather than the impossibility of doing so. In the Versions, this only occurs in the Vulgate of 2 Chronicles 4:18, but modern ETs use the idea more readily. In fact, its rarity in Versions is not surprising: in almost all the occurrences of negated חקר, especially those negated with אֵין, it is obvious from the context and the subject matter that searching or exploring (fully) is impossible.⁹²

3.3. “Without limit”

In assessing these versional translations, we will begin with the second group. A distinct sense “without limit” may, of course, have developed for a phrase such as אֵין חקר; but I am reluctant to conclude as such from the Versions.⁹³ First, a translation “end, limit” is not attested for any *positive* instance of חקר. Admittedly, the *hapax legomenon* מִחְקָר in Psalm 95:4 is translated by terms for “end” or “boundary” in both LXX and Vulgate (πέρας, *finis*); but the same is not true for חקר. Even in Job 11:7, where חקר אֱלֹהִים “the *hēqer* of God” is in parallel with תְּבִלִּית שְׂדֵי “extremity of Shaddai,” the former is translated ἄχος κυρίου in the LXX and *vestigia Dei* in the Vulgate, both meaning “the footprint/track of God.”

This lack of a positive counterpart suggests that if a negated sense “without limit” existed, it must have been a fairly fixed phrase. However, in neither the LXX nor the Vulgate is there any discernible syntactic pattern in the selection of “without limit” or “unsearchable”: both חקר לֹא אֵין/לֹא and לֹא נִחְקֵר/נִחְקֵר אֵין are translated in both fashions. Moreover, “without limit” appears in the LXX precisely in those places in which “exploring” or “searching” the subject matter may seem slightly odd. I suspect that in these instances the translation has been smoothed with a statement of *why*, in the translators’ view, searching is impossible.

⁹² For the single occasion in which לֹא-חִקֵּר connotes impossibility, see my comment below on Job 36:26.

⁹³ Some modern commentators and translations use “without limit” in various places, even where the LXX and Vulgate do not. For instance, Robert Gordis (1978, 55, 391) uses “without limit” for several instances in Job (5:9; 9:10; 34:24; and 36:26), without justifying the translation. Against the LXX and Vulgate, both the HCSB and the NET translate חקר אֵין in Isaiah 40:28 as “there is no limit”—but this is the only place they use such a translation.

In fact, all the relevant instances can be readily understood from the default construals of חִקֵּר terms. I suggest therefore that the versional rendering “without limit” is interpretive.

3.4. *Impossibility, or factual*

This leaves us with groups (1) and (3), which I dub the impossibility and factual interpretations, respectively. In all negated instances of the Noun except one (Job 34:24; see below), the context clearly connotes impossibility; and of these, all except Job 36:26 employ אֵין rather than לֹא. The use of לֹא in Job 36:26 is probably due to the careful parallel structure, with לֹא נִדְעַע in the first colon.⁹⁴

The negated *nip'al* Verb is not so simple. In both 1 Kgs 7:47 and 2 Chronicles 4:18, it is difficult to know whether the idea conveyed is the impossibility of ascertaining the weight of the bronze (NASB, HALOT), or simply the historical fact that it was not weighed (ESV, NET, NIV, NRSV). The LXX opts for the former; but against this is the fact that the *qāṭal* (Perfective) form is used. Impossibility is a marked modality, for which we should expect the *yiqtōl* form—a use of *yiqtōl* that Waltke and O'Connor dub the “non-perfective of capability” (IBHS §31.4c).⁹⁵ Apart from the form and meaning of the Verb itself, the context in each case allows either interpretation.⁹⁶

Jeremiah 46:23 is more complex, as the surrounding text is difficult to interpret. The precise meaning of Egypt’s “forest” (יַעַר) is debated: is it Egypt’s (literal) forests, her cities and buildings, her population, her army, or some combination of these?⁹⁷ The answer partly depends

⁹⁴ cf. §4.4 below.

⁹⁵ Cf. BHRG §19.3.

⁹⁶ In 1 Kgs 7:47, לֹא נִחְקֵר מִשְׁקַל הַנְּחֹשֶׁת must be related to what precedes it, but there is no lexical or grammatical indicator of this relationship. On the impossibility reading, it emphasises the “very great abundance” (רַב מְאֹד מְאֹד) of the בָּלִים, which was why Solomon “left” them. On the factual reading, it elaborates on the fairly vague opening: “Solomon left the vessels . . . ; [that is,] the weight of the bronze was not explored/ascertained.” In 2 Chronicles 4:18, the conjunction כִּי (assuming it is a conjunction, not an emphatic particle) relates the final clause (כִּי לֹא נִחְקֵר מִשְׁקַל הַנְּחֹשֶׁת) to the first: “Solomon made all these utensils to great abundance.” In this case, there are two possible relationships—and both are compatible with both the impossibility and the factual readings! The second clause either gives anecdotal evidence or support for the initial assertion (“for the weight of the bronze was not/could not be explored”), or it states a result (“so that . . .”; cf. לֹא תִכַּל שְׂאֵתוֹ in Deut 14:24).

⁹⁷ Cf. the various images in Jer 21:14; 22:6–7, 14–15, 23; Isa 2:12–13; 10:18–19, 33–34; 1 Kgs 7:2.

on (and/or determines) whether the snake metaphor in verse 22 is seen to continue into verse 23. Nevertheless, most interpretations of לֹא יִחְקֹר can be conformed to either a literal or figurative “forest.”

Among those who retain the MT,⁹⁸ the most common interpretation of לֹא יִחְקֹר is “it [Egypt’s forest] is unsearchable.” This can be divided into two sub-readings: (1) it is impenetrable, that is, too dense to search (so, ESV; NRSV; NIV; Carroll 1986); or (2) it is too vast to explore completely.⁹⁹ Van Hecke’s proposed translation depends on this second sub-reading (see below). However, it is possible that the subject of יִחְקֹר is the attacking army, rather than Egypt’s forest.¹⁰⁰

Notwithstanding these difficulties, the expression לֹא יִחְקֹר in Jeremiah 46:23 (with *yiqṭōl*) more easily fits the impossibility reading, whether its Subject is the figurative forest or the attacking force. Lundbom (2004, 222) argues for a factual (i.e., neutral modality) reading, with the forest as Subject: “it was not searched out”—that is, instead of the painstaking process of exploring the forest (whether for hand-to-hand combat, or to locate the “snake”), the invading army opted to destroy it completely. However, this interpretation is only possible if the Subject is the forest; moreover, the *qāṭal* would be expected for this reading.

Considering the context and forms of each negated *nip’al*, then, I suggest that Jeremiah 46:23 includes the modal idea of impossibility, probably with a completive construal (“could not be explored fully”), while 1 Kgs 7:47 and 2 Chronicles 4:18 are simple statements of fact (“the weight of the bronze was not explored/ascertained”).

Finally, Job 34:24 is the sole instance of negated חָקַר in the MT for which the context clearly rules out any idea of impossibility. God “shatters the mighty without investigation” ($\text{יָרַע בְּבִירִים לֹא־חָקַר}$) not because he *cannot* do so, but because he does not *need* to undertake a

⁹⁸ BHS recommends the plural variant יִחְקֹרוּ “they are [not] explored,” presumably referring to the vastness of the advancing horde, and leading into the subsequent locust metaphor; though this reading is also possible with יִחְקֹר (McKane 1996, 1134–35). Holladay (1989, 323–33) emends לֹא יִחְקֹר to כִּי־לֹא יִחְקֹר “like exploring hopping (locusts).” LXX has οὐ μὴ εἰκασθῆναι “it will never [cannot] be inferred/guessed” (cf. Wisdom of Solomon 8:8; 9:16; 19:18).

⁹⁹ The NET does not commit to either sub-reading: “The population of Egypt is like a vast, impenetrable forest” (cf. Thompson 1980, 693). In any of these readings, the בִּי presents something of a difficulty (cf. Holladay 1989, 333; McKane 1996, 1134).

¹⁰⁰ So, BHS (cf. n. 98 above). For a detailed survey of the problems and possible solutions, see McKane 1996, 1133–35.

prolonged investigation—he sees all a person’s actions (v. 21) and already “knows their deeds” (v. 25).

This instance is crucial, for it shows that the concept “unsearchable” is not *inherent* to negated חִקֵּר; rather, it is coerced by various factors, such as verbal aspect, use of אֵין, and general context. This refutes Tsevat’s statements regarding the *nip’al* נִחְקֵר and the Noun חִקֵּר (TDOT V.150). He claims that the *nip’al* “serves exclusively to express a single notion: ‘unfathomable, immeasurable,’ always in connection with a negative particle . . . or an unreal condition,” and that “a similar situation exists” with respect to חִקֵּר.

This is, at the very least, misleading. Herbert Wolf (TWOT, s.v. חִקֵּר) is rightly more cautious: “Usually, the emphasis is on the impossible.” However, where נִחְקֵר or חִקֵּר does occur in a construction meaning (for instance) “unsearchable,” it is the *construction*, including the negative particle and the Verb form, that has this meaning. The semantic contribution of נִחְקֵר/חִקֵּר to the whole is entirely consistent with the default construction of *qal* חִקֵּר—namely, “explore/search.” Moreover, even if we accept the impossibility readings of 1 Kgs 7:47 and 2 Chronicles 4:18, the fact that in the HB נִחְקֵר and חִקֵּר mostly occur in constructions meaning “unsearchable” is largely coincidental. The one positive instance of נִחְקֵר (Jer 31:37) clearly does *not* mean “unsearchable” or “unfathomable”; and חִקֵּר in Job 34:24 is even clearer.¹⁰¹

4. Negated instances: Exegetical notes

4.1. 1 Kings 7:47 and 2 Chronicles 4:18

Although I have ruled out the meanings “without limit” and “unsearchable” for לֹא נִחְקֵר here, there are still a number of possibilities for the sense of נִחְקֵר.

First, is the מִשְׁקַל “weight” of the bronze construed as a SOUGHT CONTENT or an AREA/TOPIC to be explored? In other words, which frame is evoked here: [SEEK TO KNOW] or [INVESTIGATE]? לֹא נִחְקֵר could be translated “was not sought” in the first case, and “was not

¹⁰¹ In fact, Tsevat wrongly categorises Job 34:24 as a negated occurrence with the sense “unsearchable, immeasurable.” The flaws in Tsevat’s treatment of נִחְקֵר and חִקֵּר are also present in NIDOTTE II.252–3.

investigated” in the second. Alternatively, we may read the Verb with a resultative nuance, in which case rough translations would be “was not found out” and “was not ascertained,” respectively.¹⁰² Intuitively, both are possible; but if חקר rarely evokes [SEEK] in its more concrete uses (a question to which we will return), [INVESTIGATE] is more likely here. Moreover, against most ETs, I favour the non-resultative rendering “investigated”: there is no guarantee that the people *could* have successfully determined the weight of the items, and the exploration of this was not even begun.

Secondly, Van Hecke argues that נחקר here should be understood in terms of determining the *extent* of something—in this case, a number. Thus, “the emphasis is completely on determining the extent of an (innumerable) number” (Van Hecke 2003c, 156). This presupposes an AREA construal for מִשְׁקָל, but moves beyond the frames I set out in chapter 9.

In fact, the idea of “extent” is already entailed by the meaning of מִשְׁקָל, so “determine the extent of הַנְּחָשֶׁת” is tautological. Of course, redundancy of meaning is common in language; but given that the sentence is quite sensible with the more common and ordinary sense of חקר, there is little to support it here.

4.2. Isaiah 40:28

In my view, חקר here fits easily into the [INVESTIGATE] frame; but is a completive construal intended? That is, is the תְּבוּנָה “understanding” of YHWH incomprehensible, or entirely inscrutable and beyond reach?¹⁰³ In the context, a completive construal is arguably better. The underlying idea is not YHWH’s transcendent ‘otherness,’ but the *greatness* of his תְּבוּנָה: it is such that he can be trusted in even the most dire situation (vv. 29–31).

4.3. Job 5:9; 9:10

In Job 5:9 and its echo in 9:10, אֵין חֶקֶר is closely paralleled with אֵין מִסְפָּר “without number.” Van Hecke uses this to support his pro-

¹⁰² There is no straightforward way of expressing in the *passive* a resultative [INVESTIGATE] sense in English; the ungrammatical phrase “come-to-be-known” perhaps gets across the idea. Most ETs use “was not ascertained/determined,” which is probably the closest English rendering.

¹⁰³ Cf. p. 273.

posed sense “determine the extent of” for חֶקֶר. However, this assumes that the matching elements should mean almost the same thing. Parallelism, even so-called synonymous parallelism, is often far more interesting; indeed, Hebrew parallelism works with the *expectation* that the second phrase “always adds a new dimension to the first” (Troppe 2004, 67).¹⁰⁴ In this case, with the standard figurative meaning of חֶקֶר and an impossibility reading of the construction, the two halves complement each other well: God’s deeds are such that they cannot be explored or investigated; and they are so many that they cannot be numbered.

4.4. Job 36:26

The syntax of Job 36:26 is unusual.¹⁰⁵ In particular, what is the function of the Conjunction ו introducing the final phrase (וְלֹא-חֶקֶר)? Driver takes v. 26b as either out of place or corrupt (Driver and Gray 1921, 314); nevertheless, he cites instances of a predicate introduced by ו (Job 15:17; 23:12; Ps 115:7). Verse 26b would therefore be a single Clause: “the number of his years is unsearchable” (so, ESV, NASB, NET, NRSV). The major Aramaic versions, including 11Q10 (= 11QtgJob), the Rabbinic Targum of Job, and the *Peshitta*, all omit the ו—though this is probably a smoothing of the text, harmonising with 34:24, rather than a different *Vorlage* (Shepherd 2004, 246–47). In fact, לֹא-חֶקֶר in Job 34:24 is an unreliable guide: the presence of ו in Job 36:26 should not be overlooked, and only the latter is a statement of impossibility. Hartley (1988, 475) interprets both ו phrases as Adverbial (or “predicate clause[s]”), and renders v. 26a “Behold, God is great beyond our understanding” (cf. NET).¹⁰⁶

I suggest that the verse has a more regular ABA'B' structure than ETs allow; thus:

- (8) הוֹדָאֵל שָׁגִיא וְלֹא יִגְדַע
 מִסְפָּר שָׁנָיו וְלֹא-חֶקֶר
 [A] See, God is exalted [B] and we do not know
 [A'] the number of his years [Ø] [B'] and no investigation

¹⁰⁴ This insight was most famously expounded by James Kugel (1981) and Robert Alter (1985).

¹⁰⁵ On the use of לֹא rather than אֵין in a statement of impossibility, see §3.4.

¹⁰⁶ The Andersen-Forbes analysis seems strange: it ignores the poetic structure, and is difficult to interpret.

As the [Ø] indicates, I suggest that the third phrase is an elliptical predication, meaning “the number of his years *is exalted* [i.e., great].” The basis for this is my view that the first colon does not form a simple or single Nonverbal Predication; rather, **אֵל שָׁנִיָּא** is a Nonverbal Predication, and **וְלֹא יָדָע** is a subsequent Clause (“we do not know [it/him]”), whether subordinate (adverbial) or independent. Given the tight parallel structure, this prompts us to read A’ also as a Nonverbal Predication, which is modified or extended in a similar fashion by B’: “the number of his years [is exalted], and there is no investigation [of it/him].” This requires an elliptical reading for both halves of the second colon; but the ease of mentally retrieving the elided elements is demonstrated by Eisemann’s carefully-punctuated translation: ‘*God is exalted beyond our ken, the number of His years, beyond inquiry*’ (Eisemann 1994, 312). I treat **וְלֹא־חִקֵּר** here as an Existential Clause.

The semantic structure of the verse is also illuminating. First, whether or not the implied Object of **וְלֹא יָדָע** (“we do not know”) is the preceding statement as a whole (“God is great”: NET, NIV) or only its Subject (“God”: ESV, NASB, NRSV),¹⁰⁷ the sense of **יָדַע** is clearly “understand” rather than “know (a fact).” This supports a connection between **חִקֵּר** and the idea of coming to understand the internal complexity or significance of an idea or a person. Second, the sequence from **וְלֹא יָדָע** to **וְלֹא־חִקֵּר** escalates the incomprehensibility of God: not only are mere mortals unable to come to a real understanding of God’s greatness and longevity, we are not even in a position to investigate it!

4.5. Proverbs 25:3

In the careful structure of Proverbs 25:2–27, verses 2 and 3 are tightly connected with one another. Nevertheless, the imagery in the two verses is markedly different.¹⁰⁸

We saw in §1.1 that the semantic structure of verse 3 exploits the metaphoric link between [EXPLORE] and [EXAMINE PERSON], with

¹⁰⁷ I suggest the former is preferable; though perhaps, given the brevity of the statement, it may remain ambiguous.

¹⁰⁸ This should not surprise us: a creative wisdom writer/redactor can weave together very different ideas or conceptual mechanisms to create an intriguing and complex whole.

two spatial AREAS followed by a core inner aspect (represented by a body part) of a potential EXAMINEE—all qualified with the statement *אֵין חֶקֶר*.¹⁰⁹

The ל-Phrases modifying the two AREAS pose an interpretive problem that affects our frame-semantic analysis. Several ETs render the opening words “As the heavens *for height* (לָרוֹם) and the earth *for depth* (לְעֵמֶק)” (ESV, NASB, NRSV). In the context of the verse, such a translation could mean either (i) that the heavens/earth cannot be “explored” *to discover* their height/depth, or possibly (ii) that *due to* the great height/depth of the heavens and earth, they cannot be extensively “explored.” The latter is implied by the freer translations of the NET (“As the heaven is high and the earth is deep”), HCSB, and NIV.

A more natural alternative, though resulting in a meaning similar to (ii), is that ל here has one of its “basic” spatial senses (IBHS §11.2.10)—specifically, the “terminative” sense of motion *to* a location (e.g., 1 Sam 9:12). This is a natural sense of ל with verbs of motion, and is found with חֶקֶר in Job 28:3.¹¹⁰ If this is the case, then לָרוֹם and לְעֵמֶק are expressions of EXTENT; and the meaning of the whole is that, just as שָׁמַיִם and אֶרֶץ cannot be explored to their upward and downward extremities—implicitly, because of their great extent—so a king’s לֵב cannot be fully explored.

For the purposes of annotation and locating this instance in a frame, the exploitation of the metaphor mapping poses problems. Two frames are clearly evoked; thus, I have included the occurrence

¹⁰⁹ The syntactic structure of the verse as a whole is difficult to pin down. The question is, what is the relationship between the opening threefold NP שָׁמַיִם לָרוֹם וְאֶרֶץ לְעֵמֶק וְלֵב מְלָכִים and אֵין חֶקֶר? There are two main alternatives. The first is that the verse is a single Nonverbal Clause, with the opening NP as the Subject and אֵין חֶקֶר as the Predicate: so, “The heavens . . . and the earth . . . and the heart of kings (are) without exploration.” The second is that אֵין חֶקֶר is itself an Existential Clause (“there is no exploration”), and the opening NP is either a fronted or a left-dislocated constituent (depending on one’s criteria for these categories; cf. Floor 2004, 85–88; BHRG §47) specifying the *scope* of the predication (cf. §3.1). At any rate, the structure here is very similar to אֵין חֶקֶר לְגִדְלָתוֹ in Psalm 145:3, except that the latter explicitly indicates the scope with ל. Fortunately, this problem does not affect my frame-semantic annotation, as חֶקֶר is not the Head in any larger construction containing the opening NP. That is, even though the NP is semantically relevant to the frame evoked by חֶקֶר, it is syntactically disconnected from חֶקֶר itself.

¹¹⁰ Waltke and O’Connor list allative and terminative senses as characteristic of ל with verbs of motion (IBHS §11.2.10b). If the combinations לָרוֹם and לְעֵמֶק should be taken as complex allative adverbs, like לְאַחֹר “backward” and לְמַעְלָה “upward,” the sense is slightly different, but my essential point still holds.

twice. It is listed in [EXPLORE] with שְׁמִים and אֶרֶץ as the AREA searched, along with overt expressions of EXTENT (לְרוֹם and לְעֶמֶק). It is separately listed in [EXAMINE PERSON] with לֵב מְלָכִים as the EXAMINEE. Moreover, the EXTENT of the exploration is taken as implied, by analogy from the earlier concrete expressions of extent, and so is marked as DNI. Finally, given the deliberate use of the metaphor mapping, the occurrence is linked with an Evokes relation to the source frame [EXPLORE].

5. Paradigmatic relations: Other terms and frames related to חקר

Several strategies were used to identify words that are potentially in the semantic field(s) of חקר, or in the near vicinity: examining passages in the surrounding contexts of חקר instances (§1.3), looking at related words as identified by lexica, searching modern translations and lexica for various words (“search,” “explore,” “investigate,” “examine,” “discover,” etc.), and performing a two-way search of MT-LXX correlations—that is, identifying translation equivalents for חקר in the LXX, and then examining the range of Hebrew words for which these are used in the LXX.

Most of the words we might consider are listed in table 10.4 on page 285. The words are organised into groups according to similarity of meaning. Only relevant senses of each word are mentioned.¹¹¹ In addition to these, we may note some of the words that express concepts *subsequent* to חקר in a complex event chain (e.g., [INVESTIGATE]→[COME TO UNDERSTAND]). These words are listed in table 10.5 on page 286.

In the remainder of this section, I will discuss a number of terms which are in or near the semantic field of חקר, namely, חפֿשׁ, תּוֹר, רגל, בַּקֵּשׁ, בַּחֲנוּן, and דִּרְשׁ. While there are other lemmas that could also be analysed, those that I have selected are either, in my view, the nearest synonyms of חקר, or appear in important parallels with occurrences of חקר.

¹¹¹ For completeness, there were less promising terms that I have not included in the list: תִּפְאֵר “search through (branches)” (cf. HALOT, s.v. פִּאֵר) in Deut 24:20, נִכַּר “investigate,” בּוֹר “examine” in Eccl 3:18, בַּעַה I “enquire,” בַּצֵּר “examine, test (metal)” in Jer 6:27, שִׁבַּר “test, investigate, inspect” perhaps in Neh 2:13–15, דַּעַה “seek, ask about,” as well as words for “watch (closely)” and thus “examine”: צִפֵּה (שָׁחַד *hi.* of שָׁחַד).

Table 10.4 Potential semantic near-neighbours of חקר

Root	Forms	Glosses and Notes
חפש	<i>qal, ni., pi., perhaps pu., htp., and חִפֵּשׂ</i>	“search,” “seek,” “examine”
רגל	<i>pi.</i>	“spy out”
תור	<i>qal, hi.</i>	mostly “spy out, reconnoitre” (Num 13–16 <i>passim</i>); also “look at, peer at,” so figuratively “consider, observe” (Eccl 1:13; 2:3; 7:25)
בקר	<i>pi., perhaps בִּקְרָה</i>	“scrutinise” (a cultic technical term).
פקד	<i>qal</i>	“make a careful inspection” (cf. פָּקְדָה “watch, sentry”)
שחר	<i>qal, pi.</i>	“look for early or diligently”; BDB takes its etymology as “look for dawn,” from the Noun שַׁחַר “dawn”
בקש	<i>pi., pu.</i>	“seek”
דרש	<i>qal, ni.</i>	“inquire about, investigate,” “care for,” “be intent on,” “make supplication,” “seek”
חפר	<i>qal</i>	“track, search” (extension of “dig for”)
משש	<i>pi.</i>	“explore with one’s fingers,” extension of מָשַׁשׁ “touch, handle”
בחן	<i>qal, ni., perhaps pu., בָּחוּן</i>	“test, put to the test”
צרף	<i>qal, perhaps ni., pi.</i>	“smelt (metal),” “refine”
נסה	<i>pi.</i>	“(put someone to the) test,” “train”
פלס	<i>pi.</i>	“ponder, observe, examine,” though possibly also “weigh” or “make level” (cf. פָּלֶס “scales”)
תכן	<i>qal, ni., pi.</i>	“weigh,” so “examine, check”
אזן	<i>pi.</i>	“weigh”
שאל	<i>qal, pi.</i>	“ask”

Table 10.5 Words potentially subsequent to חקר in complex event chains

Root	Forms	Glosses and Notes
יָדַע	<i>qal, ni., pi., pu., hi., ho., htp., יָדַע, מָדַע, יָדַעַת, יָדַעָה</i>	“know,” “knowledge,” “wisdom”
מָצָא	<i>qal, ni.</i>	“find,” “locate”
בִּין	<i>hi., תִּבְוִינָה, בִּינָה</i>	“understand”
לָקַח	<i>לָקַח</i>	“learning”
רָאָה	<i>qal, hi.</i>	“see,” “perceive”

5.1. חפֿשׁ

With respect to synonymy, the nearest family of terms to חקר is חפֿשׁ. The most relevant forms are the *qal*, *nip'al*, and *pi'el* Verbs. The *pu'al* and the Noun חפֿשׁ are both rare and disputed, and I will not consider them further.

The *hitpa'el* חִתְּפָאֵל means “disguise/hide oneself,” probably by extension from “let oneself be searched for” (*HALOT*, *BDB*). This meaning is somewhat removed from the major frames evoked by חקר, but interestingly it is similar to the [UNKNOWN] use of חִקֵּר and מְחַקֵּר. Though they are not identical, a similar metonymic extension is apparent in the two word groups.

We will focus on the *qal*, *nip'al*, and *pi'el*, which like חקר pertain to searching or exploring some AREA, usually for a SOUGHT ENTITY. Apart from text-critical questions, this brief analysis will concentrate on the same issues as those discussed for חקר: the main FEs, the presence (or not) of a SOUGHT ENTITY, AREA/SOUGHT ENTITY perspective, and physical vs. extended uses.

Once again, we will begin with the idea of searching a physical region. Most cases of physical searching/seeking occur with the *pi'el*; for example, Laban searched (וַיִּחְפֹּשׁ) in vain for the idols Rachel had hidden (Gen 31:35), and Joseph’s steward searched (וַיִּחְפֹּשׁ) the brothers’ sacks for the planted silver cup (Gen 44:12). Obadiah 1:6a reads אֵיךְ נִחְפָּשׁוּ עֵשָׂו “How Esau will be searched”: the *nip'al* Passive profiles the search of a physical AREA (the land of Edom), though this AREA is characterised by the progenitor of its inhabitants.

The *qal* is less frequent. Psalm 64:7[6], Psalm 77:7[6], and Lamentations 3:40 all describe a “search” of some abstract region—in the last case, in parallel with חקר.

The two other *qal* instances are particularly important for conceptual structure, in that they overtly exploit the mapping from a physical to an abstract “search.” In Proverbs 2:4, the SOUGHT ENTITY, to which the 3FSG Object suffix refers, is the abstract notion of בִּינָה “insight” and תְּבוּנָה “understanding” (v. 3). The search for this quality is to be conducted “as for hidden treasures” (כַּמְטְמוֹנִים); תְּבוּנָה/בִּינָה is thus construed as a precious commodity hidden in some unspecified AREA (cf. Gen 43:23; Jer 41:8).

In Proverbs 20:27 the imagery is more vivid. Andersen-Forbes rightly treats יהוה נֵר “the lamp of YHWH” as the Subject of the Participle Clause in v. 27b (“the lamp of YHWH . . . searches all his inmost parts”): the gender disagreement between נִשְׁמַת אָדָם “the human spirit” and חִפְשׁ confirms this. Nevertheless, the identification of נֵר יהוה with נִשְׁמַת אָדָם obviously implies that the latter can be construed as “searching” a person’s character for moral impurity. In fact, the imagery is more complex: a נֵר is typically the INSTRUMENT in a search or exploration (e.g., Zeph 1:12).¹¹² The SEARCHER is not expressed, but a self-examination is probably on view;¹¹³ the Postconstruct יהוה may identify the provider of the נֵר, or may broadly indicate the sphere within which the נֵר and the “searching” is to be understood: this “searching” relates to יהוה and his ways. Either way, the deeper point of the statement relates to the abstract notion of character; but the vividness of the expression yields a construal of the person as a dark chamber illuminated by a searcher’s lamp. I treat this as a [SEARCH] instance which evokes [EXAMINE PERSON].

Turning to the issue of FEs and AREA/SOUGHT ENTITY perspective, we find that almost all instances involve a SOUGHT ENTITY, at least implied in the context. The possible exceptions are Psalms 64:7[6] and 77:7[6], though both are abstract and difficult to interpret. Psalm 64:7[6] in the MT contains not only the *qal*, but also the *pu‘al* and Noun forms of חִפְשׁ. The opening Clause יַחְפְּשׁוּ-עוֹלֹת is typically translated “they devise injustices” (NASB) or similar, but the precise nuance is unclear to me. It could mean “they search *for* עוֹלֹת,” in which case there is a SOUGHT ENTITY but no AREA specified; or equally “they investigate עוֹלֹת,” with no SOUGHT ENTITY.

¹¹² *Contra* Loewenstamm (1987), there is no need to read נֵר as נָר (participle of נִר) “breaking up (ground by ploughing).”

¹¹³ *Contra* TDOT IV.224, which all too easily rejects the MT’s נִשְׁמַת אָדָם.

In Psalm 77:7b[6b], G. R. Driver (1936, 186), based on an Arabic root and with apparent support from the Syro-Hexapla (Driver 1943, 17), repointed יְחַפֵּשׁ to יִחְפֹּשׂ, and proposed the sense “is prostrate.”¹¹⁴ This parallels his emendation of נְגִינָתִי “my song” in v. 7a[6a] to נִגְנָתִי “I am downtrodden/downcast”—again from Arabic, as well as BH גֶּת “winepress.” A separate sense for חִפֵּשׁ is quite possible; but Driver goes too far in arguing that “it can hardly be a mere coincidence that two parallel Hebrew words can be explained by two cognate Arabic words having parallel meanings” (Driver 1936, 186). It may well be mere coincidence, given that the explanation requires both emending the consonantal text and changing the versification (transferring אֶזְכְּרָה to the end of verse 6[5], following the *Peshitta*).

In fact, the MT with the traditional understanding of יְחַפֵּשׁ is perfectly comprehensible. On this reading, verse 7[6], and particularly the last colon, marks the start of a gradual positive shift in the Psalm, after the despair of the opening verses. The shift is achieved by a mental investigation of the issues troubling the Psalmist, and expressed in the following questions (vv. 8–10[7–9]).

Aside from these two instances, חִפֵּשׁ is found in contexts in which both an AREA and a SOUGHT ENTITY can be retrieved, whether specific (e.g., 1 Kgs 20:6; 2 Kgs 10:23) or non-specific (e.g., Gen 31:35; 44:12). The perspective of each occurrence with respect to these two FEes is shown in table 10.6, divided into physical and extended (metaphorical) uses.

In five cases the AREA is the primary landmark and is expressed in the חִפֵּשׁ construction, but the SOUGHT ENTITY is also salient. In three of these, a SOUGHT ENTITY is expressed in the following expression: 1 Kings 20:6 (כָּל-מִחְמַד עֵינֶיךָ) “everything desirable to your eyes”), Obadiah 1:6 (מִצְפְּנָיו) “his hidden treasures”), and Zephaniah 1:12 (הָאֲנָשִׁים הַקֹּפְאִים עַל-שִׁמְרֵיהֶם) “the people who thicken on the dregs,” i.e., “those who are complacent”). In Lamentations 3:40, the profiled AREA is דְּרָכֵינוּ “our ways,” and the implied SOUGHT ENTITY is any “ways” that constitute “sins” (חַטָּאִים, v. 39 *ketib*), “rebellious” (פֶּשַׁע), or “being obstinate” (מָרָה, v. 42). In Proverbs 20:27, “all the chambers of the body” (כָּל-חֲדָרֵי-בֶטֶן) are likewise implicitly searched for moral impurity—or for רָע “evil” (v. 30, where חֲדָרֵי-בֶטֶן is repeated).

¹¹⁴ Emerton (1969, 214) applies Driver’s proposed meaning to the *pu’al* in Proverbs 28:12.

Table 10.6 חֶפֶשׁ: AREA VS. SOUGHT ENTITY and physical vs. extended

	AREA profiled	SOUGHT ENTITY profiled
Physical	1 Kgs 20:6; Prov 20:27 (also extended); Oba 1:6; Zeph 1:12. Implicit: Gen 31:35; 44:12; 2 Kgs 10:23	1 Sam 23:23; Amos 9:3
Extended	Lam 3:40	Prov 2:4 (also physical)

In three instances (all *pi'el* and all physical searches), חֶפֶשׁ is used in a one-word Intransitive Clause, so that neither AREA nor SOUGHT ENTITY is expressed; but in each case, the AREA is the implicit landmark. In Genesis 31:35, the SOUGHT ENTITY is Laban's תַּרְפִּים "idols." In verse 33, Laban rather absurdly goes through tent after tent (אֹהֶל, five times in this verse), ending at last in Rachel's. Here, we are told, "Laban groped about (וַיִּמָּשֵׁשׁ) the whole tent" (v. 34). In the following verse, after Rachel's disingenuous apology, we are given a summary: "he searched (וַיִּחְפֹּשׁ), but did not find (מָצָא) the idols." Thus, although the SOUGHT ENTITY is mentioned in the final Clause, the focus in the first is still on the AREAS that Laban searched. In Genesis 44:12, the SOUGHT ENTITY is Joseph's silver cup, and the primary landmark for וַיִּחְפֹּשׁ is the brothers' sacks (אֲמָתַחַת, vv. 11–12). Finally, in 2 Kings 10:23 Jehu instructs the servants of Baal to "search (וַיִּפְשְׁוּ) and see (וַיֵּרְאוּ) that there are no servants of YHWH here among you." Again, although the SOUGHT ENTITY is specified in the second Clause, the more salient participant in וַיִּפְשְׁוּ is, from earlier in the verse, "the house of Baal" (בֵּית הַבַּעַל) and "the servants of Baal" (עֲבָדֵי הַבַּעַל).

The three remaining instances have the alternate perspective. We saw in chapter 9 (§3.2) that 1 Samuel 23:23 is a *resultative* use of חֶפֶשׁ, which not only has the SOUGHT ENTITY as the primary landmark, but also includes the successful result of the searching in its temporal profile; thus, Saul is pledging to "hunt down" his rival. Given the specificity of the SOUGHT ENTITY, this sense belongs in [LOCATE].

Amos 9:3 is similar, though the syntax is more difficult. The question is whether we should take מִשָּׁם אֶחְפֹּשׁ וּלְקַחְתִּים as two separate Clauses ("from there I will search, and I will take them"),¹¹⁵ or combined Clauses with מִשָּׁם and the 3MPL Suffixed Pronoun ׁם- as shared

¹¹⁵ So, the syntactic structure in Andersen-Forbes.

elements (“from there I will search-and-take them”). That is, does **מִשָּׁם** modify one Clause or both, and is **ם**- an argument only of **לְקַחְתִּי** or also of **אֶחְפֹּשׁ**? The grammar and context both demand the latter answers. On its own, **מִשָּׁם אֶחְפֹּשׁ** is odd: **שָׁם** refers to the location of the people hiding from YHWH, so the search can hardly proceed *from* there *to* somewhere else, especially given verse 2. Rather, **מִשָּׁם** primarily modifies **לְקַחְתִּי** (cf. **יְדֵי תִקְחֶם** in v. 2), thus binding the whole together. In turn, **ם**- expresses both the THEME of **לָקַח** and the SOUGHT ENTITY of **חָפֵשׂ**. Not only does this coerce a heightened salience for the SOUGHT ENTITY, but the combination of Verbs requires a resultative sense for **אֶחְפֹּשׁ**. The NET captures the syntax and sense: “. . . I would hunt them down and take them from there.”

Proverbs 2:4 is the final instance of **חֲפֹשׂ** in which the SOUGHT ENTITY is the primary landmark. This is suggested by the parallelism with **בִּקֵּשׁ** “seek,” and confirmed by the phrase **בְּמִטְמוֹנִים**, which draws a comparison between **מִטְמוֹנִים** “hidden treasures” and the 3FSG Suffixed Pronoun **הָ** (“it,” referring to **בִּינָה** “insight” and **תְּבוּנָה** “understanding” in v. 3). Thus, the Object of the Transitive construction **תִּחְפְּשֶׁנָּה** is construed as a hidden entity in some unspecified area.

Unlike both 1 Samuel 23:23 and Amos 9:3, **חֲפֹשׂ** in Proverbs 2:4 does not have a resultative sense. It is true that verse 5 guarantees that such a search will be successful; but this assurance (**אָז תֵּבִין יְרֵאת יְהוָה** “. . .”) actually confirms that **חֲפֹשׂ** in verse 4 does *not* itself entail the result. A statement such as *If you track it down, then you will find it* is unacceptably tautological. Consequently, [SEEK] is probably the best frame for **חֲפֹשׂ** in Proverbs 2:4.

We will return to **חֲפֹשׂ** in the next section, and compare it with **חָקַר**. Thus far, we have seen that both the *pi'el* and the *qal* can be used either in a [SEARCH] or in a [SEEK] sense, though [SEARCH] is the typical perspective. The *pi'el* tends to evoke a *physical* search, and the *qal* an abstract, mental search or seeking.

5.2. תּוֹר

In all its uses, the Verb **תּוֹר** seems to evoke the idea of intentional visual perception, that is, examining something by looking at it; and the more specific senses are quite probably extensions from this basic

concept.¹¹⁶ The most common specific sense relates to observing a territory with a particular purpose, namely, to gain knowledge of the area to enable future settlement or occupation (Num 10:33; 13–16 *passim*; Deut 1:33; Ezek 20:6). The English “spy out” is thus a very appropriate translation for these occurrences. The causative hifil וַיִּתִּירוּ in Judges 1:23 also fits here: the “house of Joseph” arranged and effected the spying operation by sending some of its number to observe Bethel. Interestingly, this “spying” operation seems to consist in watching the city from *outside* (הַשְּׁמָרִים) “the watchmen,” v. 24) until an opportunity for information and entry arises.

Some occurrences are problematic. Some take יָתוּר in Job 39:8 as a substantive form (e.g., Andersen-Forbes), so that the Clause reads “its pasture is the ledges of the mountains.” However, the Versions (Targum, LXX, Vulgate) support repointing to יָתוּר (*qal yiqṭōl*), in which case the following two Noun Phrases are in apposition: “it spies/explores mountains, (which are) its pastures.” Proverbs 12:26 is difficult to interpret as it stands. J. A. Emerton (1964) suggests the *hop’al* of נָתַר here, yielding “a righteous person is set free from harm” (reading מִרְעָה for מִרְעָהוּ). Other proposals include יָתַר (*qal*), thus “a righteous person spies his pasture,” or יָסַר מִרְעָה צָדִיק “there is a turning from evil to righteousness” (cf. *BHS*; *HALOT*, s.v. תוּר).

There are a few instances, all referring to events in the Exodus, which are typically translated “seek out,” “search out,” or “find.” Two of these (Num 10:33; Deut 1:33) relate to the fact that God and/or the ark of the covenant went before the main body of the Israelites to “spy out” (לָתוּר) a place to camp (מְנוּחָה or לְחֻנְתָּכֶם). The other (Ezek 20:6) states that YHWH had promised to bring them into the land which he had “spied out” for them. The three instances have very similar syntactic structures, involving a benefactive construction: לְ תוּר “spy out for (someone).”

If “seek out” and “find” are appropriate translations, this is a significantly different sense to those found elsewhere (most notably Numbers 13–14), since it evokes [SEEK] or [DISCOVER] rather than [EXPLORE].¹¹⁷ There is a possible motivation for such an extension, in

¹¹⁶ *HALOT* (s.v. תוּר) cites the possibly related root תָּאָר, with related cognate terms including Syriac *tā’ar* “pay attention, be aware,” Christian Palestinian Aramaic **t’r* “look at, consider, observe,” and Arabic *ta’ara* IV with *’ilāy* “continue to look at.”

¹¹⁷ Although the versional evidence in these three instances is varied, in Deuteronomy 1:33 the LXX uses the Verb ἐκλέγω “choose, single out.”

that an area can be “spied out” in order to find a desired entity within it; thus, *תור* may mean “seek (by spying out an area).” Alternatively, this use may be consistent with the uses in Number 13–16: it may signify that YHWH *examines and explores* a potential place for his people to rest—which paints a picture of God lovingly and carefully taking his time to select an appropriate location.

The metaphoric uses in Ecclesiastes are difficult to pin down. Ecclesiastes 1:13 is best understood in the [INVESTIGATE] sense (with a visual nuance), that is, “to scrutinise . . . everything that is done under heaven.” Ecclesiastes 2:3 may be understood as “investigating” a broad set of activities, namely, indulging in wine and embracing folly. The purpose of this investigation is gaining knowledge (also expressed with a perceptual term—*ראה* “see”) of what is good for people to do “under heaven.”

Ecclesiastes 7:25 is perhaps the most difficult, because the sequence of Verbs employs a number of images: *לדעת ולתור ובקש* “to know and to scrutinise and to seek.” The first most directly expresses the purpose of the overall activity, namely, gaining understanding of *חכמה וחשבון* “wisdom and the scheme of things”; and *ידע* is again used in v. 25b in relation to wickedness and folly. The other two Verbs (*תור* and *בקש*) employ different images for the acquisition of understanding. *תור* construes the desired topic of understanding (*חכמה וחשבון*) as an AREA; and knowledge of this AREA is gained by scrutinising it or looking over it. Conversely, *בקש* construes the desired topic of understanding as a hidden object, which is located and aquired through effort (i.e., intense thinking).

Finally, *לא־תתרו* in Numbers 15:39 is typically translated “not follow (after your own heart and eyes).” However, it can be interpreted in the perception sense: “not look/gaze (after).” Understood figuratively, this evokes the idea of desiring what one sees, lingering over it with the eyes.

5.3. רגל

Across its *binyanim*, *רגל* has two distinct senses: the *qal* *רגל* means “slander,” and the *pi’el* *רגל* can mean either “slander” or “spy out.”¹¹⁸

¹¹⁸ I will leave aside the question of whether *תרגלתי* in Hos 11:3 is a rare *tip’el* form (BDB, s.v. *רגל*) or a corruption of the *hip’il* *הרגלתי* (cf. HALOT, s.v. *רגל*; GKC §55h; Joüon-Muraoka §59e).

The connection between these two is uncertain; however, the latter almost certainly stems from the Noun רֶגֶל “foot” (*TDOT* XIII.310, 322). We can therefore reasonably suppose that the concept of TRAVELLING IN AN AREA is pertinent to this sense of רֶגֶל.¹¹⁹ In addition, ATTEMPTING TO GAIN KNOWLEDGE is invariably the goal; and most of the time, it involves INTENTIONAL PERCEPTION (e.g., the instruction to the מְרַגְּלִים in Joshua 2:1 to רְאוּ אֶת־הָאָרֶץ “view the land”).

Two further features stand out. First, unlike חֶקֶר and תּוֹר, רֶגֶל occurs in the HB exclusively in a non-figurative sense; that is, the AREA is a physical territory. This suggests that it may have less of an emphasis on rational assessment.¹²⁰ Second, every occurrence carries a negative connotation: the “spying” activity has hostile intent toward the present occupants of the AREA, or it is at least secret and underhanded.

רֶגֶל and תּוֹר, in the appropriate senses, are close enough to be placed in the same frame as one another—indeed, [EXPLORE] is a reasonable option. Alternatively, we could use a more specific child frame [SPY OUT], which narrows down the PURPOSE from [EXPLORE] to the gathering of information that would enable the occupation (hostile or otherwise) of an AREA.¹²¹

5.4. בַּחַן

According to Tsevat, בַּחַן “does not occur in any objective practical main or secondary realm which might draw one’s attention away from its use in the spiritual or religious realm (its use in Zech 13:9 is an exception; here it appears in a simile!)” (*TDOT* II.70). This too easily dismisses Zechariah 13:9, for בַּחַן is used on *both* sides of the simile: בָּחֲנֵם “I will test them” is compared with בָּחֲנֵה אֶת־הַזָּהָב “testing gold,” so that the latter at least is not incongruous, even if it is conditioned by the preceding צִרְף “smelt, refine.” Moreover, in both Job 23:10 and Proverbs 17:3 בַּחַן is used in an abstract personal sense (“test” somebody), but drawing on the image of refining metals—and this without any other Verb to denote the physical refining process. Tsevat rightly observes that בַּחַן is mostly used in a “religious” sense,

¹¹⁹ Ch. 9 §1.1.

¹²⁰ Cf. *TDOT* XV.605.

¹²¹ FrameNet, in effect, adopts the first solution: the phrasal Verb *spy out the land* is currently in the [SCRUTINY] frame (though the LU entry is still in development).

expressing the idea of divine testing and knowledge of people; and even where the image of “testing” precious metal occurs, this is invariably an analogy for an abstract “testing.” Nevertheless, the indications are that *בחן* *does* occur in a “practical realm,” which forms the experiential basis for figurative extension—even if this basis has receded somewhat, so that the abstracted image schema dominates.¹²²

Turning to the abstract uses of *בחן*, Tsevat argues that the vast majority of the time it denotes the attempt to gain knowledge “purely intellectually or intuitively,” as opposed to *צָרַף* and (mostly) *נִסָּה*, which mean “to seek to attain knowledge or understanding through trial or temptation” (TDOT II.70). That is, the kind of testing denoted by *בָּחַן* is undertaken purely by reflection and, when God is the subject, with supernatural insight.¹²³ Conversely, according to Tsevat, “*bḥn* . . . means ‘to test through an action, to lead into temptation’ only very rarely” (TDOT II.71).

I suggest that the reverse is true: while in some cases there is no discernible action or difficult situation from the which evaluation is made, in the majority of instances there *is* such situation. Thus, there are two main abstract senses. One corresponds to [EXAMINE PERSON], or to [INVESTIGATE] in the rare cases in which it is used with a non-personal patient (Job 12:11; 34:3).¹²⁴ This sense agrees with Tsevat’s explanation. In Psalm 11:4–5, for instance, we read that YHWH’s “eyes see, his glance”¹²⁵ tests (*יִבְחֶנּוּ*) the sons of humanity,” and that he “tests (*יִבְחֶן*) the righteous and the wicked.” The same sense is evoked in the two places in which *בחן* is paralleled with *חקר* (Jer 17:10; Ps 139:23). However, *בחן* in these frames differs slightly from *חקר* in that *בחן* specifically connotes examining something to see if it meets some standard (often moral, though not always: Job 12:11).

The other sense is related to [EXAMINE PERSON] or [INVESTIGATE], but it denotes an even more specific investigation, this time in its

¹²² Cf. ch. 6 §4. It is perhaps possible that the process happened in reverse, so that the physical sense developed from an original abstract meaning under the influence of *צָרַף*. Either way, by the time of BH it seems that the categorisation triangle was in place, so that the abstract mental activity is treated as “like” the physical.

¹²³ Cf. TWOT, s.v. *בָּחַן*: “*bāḥan* . . . denotes examining to determine essential qualities, especially integrity.”

¹²⁴ Again, I consider that the testing of a person’s “heart/mind” (*לֵב*, *בְּלִיָּה*) or “way” (*דֶּרֶךְ*) constitutes a *personal* testing.

¹²⁵ Holladay 2000, s.v. *עֲפָעַיִם* “rays, gleam, **flashing glance of the eye**”; but traditionally “eyelids.”

method: the agent carries out a carefully designed action on the patient, or places it in a difficult or pressured situation, to see what the result will be—whether the patient will stand the test intact. Thus, Joseph’s test of his brothers (Gen 42:15), which comes down to a test of their words and their honesty (42:16), is carried out by detaining most of the brothers while one returns for Benjamin. With a personal patient, the purpose is to see how the patient will respond, and often the hope is that this process will improve or refine their character. In Malachi 3:10, the people of Judah are even invited to “test” יְהוָה by tithing honestly; and they are to do so to find out if יְהוָה will respond by pouring down blessing on them. Of course, “testing” God by acting wickedly (Mal 3:15), testing on his patience and forbearance, is another matter entirely.

The majority of instances of בָּחַן express this idea of “testing by acting on something/somebody,” including all those which are in parallel with צָרַף or are compared with the “refining (metal)” sense (Jer 9:6; Zech 13:9; Ps 17:3; 26:2; 66:10; Job 23:10; Proverbs 17:3). In Job, in light of his circumstances (chs 1–2), the personal instances in which Job is (or should be) “tested” undoubtedly carry this idea (Job 7:18; 23:10; 34:6). Given the specific nature of this kind of examination, a frame like [PUT TO THE TEST] is needed.

Finally, in Psalm 139:23 not only is בָּחַן in parallel with חָקַר , but each is followed in a logical sequence by יָדַע . That is, both חָקַר and בָּחַן here connote a process whose desired result is (coming to) *knowledge*.

5.5. דָּרַשׁ and בָּקַשׁ

The prototypical [SEEK] term in BH is בָּקַשׁ . I have already discussed some of its major characteristics in chapter 9, and for our purposes this will suffice. בָּקַשׁ is not used in parallel with חָקַר in the HB, but its semantic neighbour דָּרַשׁ is, in Deuteronomy 13:15[14].

דָּרַשׁ has a wide variety of uses, most of which are abstract. M. Gertner (1962, 5) describes its “fundamental notion” in BH as “that of inquiring and investigating”; but the range of senses also includes “care about (someone/something),” “study,” “inquire about (someone),” “strive to bring about (peace, harm, justice, etc.),”¹²⁶ “demand,

¹²⁶ This corresponds to the HALOT sense (6), “to be intent on.”

require (someone's blood/life)," "inquire of (God, gods, or a medium)," "turn to, seek (in prayer and worship, or for help)." The last two senses (or subsenses) in this list are very common, and the final gloss suggests an underlying image schema of physically SEEKING some object. Indeed, BDB uses the word *seek* in five out of its seven listed senses for the *qal*; for example, (7) "*seek with care, care for*."

Although it is perhaps less frequent than might be assumed, there is also a physical "seek" sense for דָּרַשׁ. In Job 39:8, for instance, we are told that the wild donkey "explores the mountains as its pasture, and seeks (דָּרַשׁ) every verdant plant." Other instances include Deuteronomy 22:2, Job 39:8, Proverbs 31:13, and Ezekiel 34:6, in parallel with בָּקַשׁ. Indeed, דָּרַשׁ occurs in near-synonymous parallelism with בָּקַשׁ considerably more than any other word does (cf. also Deut 4:29; Judg 6:29; Isa 65:1; Jer 29:13; Zeph 1:6; Ps 24:6; 38:13[12]; 105:4; Job 10:6; Prov 11:27; 1 Chr 16:11). This suggests that דָּרַשׁ is the nearest synonym to בָּקַשׁ in the HB, though it is used less of physical "seeking," and very often with reference to deity. If the image schema influences the majority of uses of דָּרַשׁ, we would expect the notion of a SOUGHT ENTITY to be extended metaphorically.

Two pertinent points emerge from this. First, it is striking that דָּרַשׁ is used to mean "strive to bring about (wellbeing [שְׁלוֹם] or harm [רָעָה] for someone)" (e.g., Deut 23:7[6]; Isa 1:17; 16:5; Jer 29:7; 38:4; Ps 38:13[12]; Esth 10:3; Ezra 9:12), and "demand, require (someone's blood or life)" (e.g., Ps 9:13; Ezek 34:10; etc.). This reinforces the conceptual structure we saw in chapter 9 §2.3, where [SEEK] naturally extends to the abstract [ATTEMPT] and [DESIRE] frames.¹²⁷

Second, the sense "inquire into, investigate (a matter)" resembles [INVESTIGATE]. חָקַר, as the parallel in Deuteronomy 13:15[14] illustrates. However, we have already analysed חָקַר in this verse as treating the matter in question (described in the previous verses) as a figurative AREA to be explored; so is it possible that דָּרַשׁ here profiles an abstract SOUGHT ENTITY? It is: our study of conceptual structure predicted that both [EXPLORE] and [SEEK] terms could be extended to the process of gaining knowledge (ch. 9 §2.2). Both חָקַר and דָּרַשׁ here express a striving for truth or knowledge; but whereas the former construes this knowledge as an AREA to be explored, דָּרַשׁ con-

¹²⁷ Even the common sense "turn to, seek" (in prayer and worship) may well carry the connotation of "desiring" or "attempting to gain" the help of God.

strues it as an unknown thing to be located and thus known. The rapid change in imagery is quite possible; indeed, the third Verb וְשָׁאַלְתָּ “and ask” changes it yet again.

5.6. Conclusion

We clearly cannot speak of *the* nearest synonym to חִקֵּר, because each of the lexemes חִפֵּשׁ, תּוֹר, רֶגֶל, and בַּחֲן connects with a different subregion of the semantic range of חִקֵּר. תּוֹר has a similar semantic range, though probably emphasises the idea of INTENTIONAL PERCEPTION rather than TRAVELLING IN AN AREA. רֶגֶל overlaps with the physical [EXPLORE] sense of חִקֵּר (though for רֶגֶל this is itself an extension from the more ‘basic’ physical notion “foot”), but not, as far as we know, the figurative; and it has negative or hostile connotations. בַּחֲן does *not* overlap with [EXPLORE]; but in one of its abstract uses, it draws very close to [INVESTIGATE]. חִקֵּר. Nevertheless, *contra* Tsevat, חִקֵּר rather than בַּחֲן more typically expresses the attempt to gain knowledge “purely intellectually or intuitively.” For several reasons, חִפֵּשׁ is perhaps the most interesting lexeme to compare with חִקֵּר; but we will return to this comparison in the following section.

6. Towards a frame account of חִקֵּר terms

At this point, we will consider some broader questions and, for at least some of these, draw conclusions for frame-semantic analysis of חִקֵּר in BH.

6.1. AREA vs. SOUGHT ENTITY

We saw in chapter 9 §1.2, and then particularly with Judges 18:2 (page 251), that the line between [EXPLORE] and [SEARCH] is not particularly clear; that is, we cannot always answer with certainty whether we should understand a SOUGHT ENTITY in the context.

Perhaps a more important question pertains to those instances which clearly *do* involve a SOUGHT ENTITY (and thus belong in [SEEK SCENARIO]); namely, whether a given word always focuses on the AREA searched over the SOUGHT ENTITY (or *vice versa*), or whether alternation is possible.

If we begin with the more abstract cases, this is difficult to answer. However, the physical instances (listed on page 238), of which the

figurative are extensions, are more straightforward. In all verbal occurrences but one, the Direct Object in a Transitive construction (or, with the *nip'al* in Jeremiah 31:37 and 46:23, the Subject of a Passive construction) represents an AREA explored, whether or not there is also a SOUGHT ENTITY on view.¹²⁸ The exception is an Intransitive Clause in Ezekiel 39:14, where contextually both the AREA and the SOUGHT ENTITY are salient.¹²⁹ This data strongly suggests that חקר tends to profile the activity of searching against the primary landmark of an AREA.

To a certain extent, this carries over into metaphoric extensions. This is clearest with instances in the personal sphere (listed on page 239). The personal use of חקר rests on a more fundamental and general *container* image, in which a person is viewed as an object or region containing (and often concealing) thoughts, emotions, attitudes, desires, or moral attributes. Alternatively, rather than the person, some key organ may be conceptualised in this way. This image is especially evident with לב in the HB, in expressions like לִדְעַת בִּי-תְבוּאָה אֶת-אֲשֶׁר בְּלִבְךָ “to know what is in your heart” (Deut 8:2), מוֹרְשִׁי חֲכָמָה בְּלִבְךָ “for wisdom will enter your heart” (Prov 2:10), לִבִּי מְחַשְׁבֶּת לְבִי “the desires of my heart” (Job 17:11), מַחְשְׁבֶּת לְבִי “the intentions/plans of his heart” (Gen 6:5; Ps 33:11), and significantly, לִב תַּעֲלְמוֹת “the secrets of the heart” (Ps 44:22[21]).¹³⁰ This is related to the folk belief that the heart was the seat of one’s thoughts, attitude, will, and conscience.¹³¹

It is thus no surprise that a person, or one of their organs, can also be “searched” to discover a mental or emotional state. In the first case, one person can “search” or “examine” another to discover the truth about them, either in a legal (Prov 18:17) or non-legal (Prov 28:11) context. Jonathan promises to “search” his father to discover his disposition toward David (1 Sam 20:12). Of course, the God who sees all

¹²⁸ There is some doubt over Jeremiah 46:23; nevertheless, in all the noteworthy interpretations apart from Lundbom’s (cf. §3.4), there is an implied AREA which features as the primary landmark.

¹²⁹ The sole instance of the Noun חֲקָר in a physical domain (though it is simultaneously metaphoric) is Proverbs 25:3, where there is no SOUGHT ENTITY.

¹³⁰ A vivid and undoubtedly ‘living’ variation on this imagery is חֲרוּשָׁה עַל-לִוְיָ “inscribed on the tablet of their heart” (Jer 17:1; cf. Jer 31:33; Prov 3:3; 7:3).

¹³¹ Cf. ch. 3 §§6.1–6.2. Indeed, לֵב is often used metonymically to represent these mental states, without a container construal (e.g., Deut 6:5; 30:17; 1 Sam 17:28; 2 Kgs 22:19).

is able to “search” people so that he knows their attitudes and thoughts completely (Ps 139:1, 23); and he is said to “search” or “examine” people in judgment (Job 13:9)—implicitly, for sin. On the other hand, because God sees and knows all that people do, he has no need to undertake a laborious “search” in the way that human judges must; thus he shatters people “without searching” (Job 34:24).¹³²

The same types of search or examination may be carried out on a person’s לֵב “heart” or כִּלְיֹת “kidneys.” Both God (Jer 17:10) and people (Judg 5:16; Prov 25:3) may search (or at least attempt to search) a person’s לֵב to discover their attitudes and motives. In a related way, people may search their own “ways” (דְּרָכִים), that is, reflect on the moral character of their behaviour (Lam 3:40)—again, implicitly searching for ongoing sin (vv. 39–42).

Thus, though there are various ways in which a person or their לֵב may be conceptualised, the primary focus of חֶקֶר on the AREA seems to transfer from the physical to the personal sphere. The single exception is Psalm 44:22[21] where, as we saw, the SOUGHT ENTITY is syntactically and semantically prominent. However, this can be explained by the resultative sense of חֶקֶר here, denoting a *successful* search: if the temporal profile is extended to include the finding of the SOUGHT ENTITY, it obviously becomes more salient.

Beyond the physical and personal domains, precise semantic analysis of חֶקֶר is considerably more difficult, as it is not always clear how to differentiate a figurative AREA from a SOUGHT ENTITY. For example, as we saw in §2.14, it is difficult to decide between “*searched for* words” and “*explored* words” in Job 32:11. In other cases, where the term has an entrenched abstract sense, one could even argue that the distinction between “search for something” and “explore an area” may have lost relevance. For instance, חֶקֶר and חִקְרֵי are used in several places with reference to “investigating” a matter of truth or morality (Deut 13:15[14]; Job 5:27; 29:16; Prov 25:2). This sense undoubtedly developed from either [EXPLORE] or [SEARCH]; but is the metaphoric link still active? Has it become partially detached from the diachronic source domain, so that the AREA/SOUGHT ENTITY distinction is all but meaningless?

¹³² The tension between these perspectives on God’s judgment is only apparent; in each case, the language draws an analogy from the processes used in human judicial processes, and these analogies and projections must not be pressed too far.

These questions cannot be solved indisputably without native speakers. Nevertheless, in my view it is likely that the metaphoric link is still active in such cases, even if subconsciously. חקר terms are used several times in figurative uses that are novel (non-entrenched) and creative—for instance, in connection with wisdom (Job 28:27), words (Job 32:11), and (the taste of) wine (Prov 23:30). Moreover, in Job 28:27 there is no doubt that the mapping operates from the physical image of exploring. Finally, in the personal sphere the metaphor mapping is clearly alive, or at least able to be revived and exploited (e.g., Prov 25:3).¹³³

It is therefore reasonable to assume that the physical image of “searching” or “exploring” still functions as the source domain in the range of abstract uses of חקר. It is also reasonable, given the rarity with which חקר profiles a SOUGHT ENTITY over the AREA (or their equivalents) in the physical and personal spheres, to assume that such a construal will not generally apply to the various abstract extensions—unless, of course, there is some contextual indication. A word like בִּקֵּשׁ or דָּרַשׁ would more naturally suit imagery that focuses on a figurative SOUGHT ENTITY.

6.2. Temporal profile, completive and resultative uses, metonymic shifts

As with English *explore* and *search*, חקר terms are characteristically used for telic processes, so that a perfective aspect will imply a completive nuance: a search over the entire AREA. This does not warrant a separate sense, however: the completive/non-completive opposition holds for telic processes generally, and does not relate to the peculiarities of specific Verbs.

Beyond this, חקר has greater flexibility than English *explore* or *search* in terms of its temporal profile. The resultative sense of חָקַר in Psalm 44:22[21] metonymically evokes not only the figurative searching process, but also the event of discovery—indeed, this is the temporal focal point. Job 8:8 displays a more complex metonymy with חָקַר, the focal point of which is the end of the event/state chain [INVESTIGATE]→[COME TO UNDERSTAND]→[UNDERSTANDING]. A very different, but equally complex metonymy occurs with חָקַר and מְחַקֵּר in Psalm 95:4, Job 11:7, and Job 38:16, where the “exploration”

¹³³ Cf. Cruse 1986, 42.

process has become “a place for exploration,” and hence “unexplored mysteries.” In both Job 8:8 and the [UNKNOWN] senses, a shift has also occurred among the FEs within the original [EXPLORE], in that both these LUs denote not (only) the *process* of exploration, but (primarily) the AREA/TOPIC that has been or would be explored.

6.3. חִקֵּר vs. חִפֵּשׁ, and [SEARCH]/[SEEK] variation

חִקֵּר and חִפֵּשׁ have a great deal in common. Both are used in the physical domain to denote the searching of an AREA for a SOUGHT ENTITY (Ezek 39:14; Gen 44:12); both are extended to abstract topics, both with personal subjects (Job 13:9; Lam 3:40) and non-personal (Prov 23:30; Ps 77:7[6], perhaps); and both occasionally display a resultative sense (Ps 44:22[21]; 1 Sam 23:23). Both are extended metonymically to a domain related to being unsearched, unsearchable, and so hidden: חִקֵּר/חִקְרָה in Psalm 95:4, Job 11:7, and Job 38:16, and חִפֵּשׁ in the *hitpa'el*. Interestingly, neither is used with both an AREA and a SOUGHT ENTITY in the same construction.

The most obvious difference between the two is that, in the physical domain, חִקֵּר more often evokes [EXPLORE], while חִפֵּשׁ evokes [SEARCH] in every occurrence. Moreover, whereas חִפֵּשׁ is used both with specific and non-specific SOUGHT ENTITIES, the same is not true for חִקֵּר: where חִקֵּר is used in the context of a SOUGHT ENTITY (whether physical and metaphoric), it is invariably non-specific.¹³⁴ As we saw in chapter 9 §1.2, cases which lie in the transitional area between [SEARCH] and [EXPLORE] tend to involve non-specific SOUGHT ENTITIES. We may therefore say that, although there is considerable semantic overlap, חִפֵּשׁ is prototypically a [SEARCH] word, and חִקֵּר is prototypically an [EXPLORE] word.

One of the most difficult categorisation issues, for both חִקֵּר and חִפֵּשׁ, pertains to the [SEEK]/[SEARCH] perspective difference. Both terms more typically profile an AREA rather than a SOUGHT ENTITY; but there are a few exceptions, in which the SOUGHT ENTITY fills a core syntactic role, and the AREA is less salient. Should these occurrences be allocated to a separate LU in [SEEK]?

In Psalm 44:22[21] (חִקֵּר), 1 Samuel 23:23 (חִפֵּשׁ), and Amos 9:3 (חִפֵּשׁ), the perspective shift can be explained by the resultative sense:

¹³⁴ This includes Psalm 44:22[21], despite the fact that the Demonstrative זאת is specific (cf. §2.7).

if the temporal profile of a “search” process is extended to include the finding of the SOUGHT ENTITY, this FE naturally becomes even more salient. Furthermore, such a resultative use warrants a LU in the resultant frame—[BECOME AWARE OF] for Psalm 44:22[21], which is non-specific, and [LOCATE] for the **חפש** instances, which are specific. The secondary question is which lead-up frame should also be linked to each occurrence. Given the consistency of the [EXPLORE]/[SEARCH] use of **חקר**, I have used [EXAMINE PERSON] for Psalm 44:22[21]; and while the **חפש** cases seem less clear (due to the complexity to which we will now turn), they are probably best linked with [SEARCH].¹³⁵

In Proverbs 2:4 (**חפש**), there is no such explanation. The sense is not resultative, yet it fits a [SEEK] situation; indeed, there is no contextually accessible AREA. The closest English equivalent is the expression *search for (something)* with no expressed AREA—hence translations of Proverbs 2:4 like *if you . . . search for it like hidden treasure* (HCSB, NET).¹³⁶ In FrameNet, *search* sentences like this appear in [SCRUTINY], which for our purposes is like [SEARCH];¹³⁷ however, there is also a [SEEK].*search* LU in FrameNet, which is currently marked as a “problem.”¹³⁸

In support of the FrameNet annotations, one could argue that words like *search* and **חפש**, which typically profile an AREA but can vary in their perspective, intrinsically evoke the idea of an AREA, even when it is not expressed—at least more so than straightforward [SEEK] words. However, the difference (in English) between *search for it like hidden treasure* and *seek it like hidden treasure* is at best very subtle, and in both cases the SOUGHT ENTITY is far more salient than the AREA. So then, is the perspectival difference between *search an*

¹³⁵ An alternative solution would be to place Psalm 44:22[21], for instance, in a [BECOME AWARE OF PROCESS] frame, with [INVESTIGATE] and [BECOME AWARE OF] as subframes. This would result in a proliferation of extra frames, but in reality is not greatly different from the solution I have adopted.

¹³⁶ According to the OED (s.v. ‘search, v.’ II.11), there is an archaic and near-obsolete use of *search* in this sense in which the SOUGHT ENTITY is the transitive Direct Object. This use is even closer to **חפש** in Proverbs 2:4.

¹³⁷ [SCRUTINY].*search* includes sentences such as *When the spinning finally settled, he searched for her running figure, and Duck and Frog search for their friends and it takes quite some time to find them all.*

¹³⁸ The FrameNet editors are doubtless aware of the difficulty we are currently considering; but I have not as yet received an explanation of the reason for the “problem” status.

area and *search for an entity* more important for the purpose of sense delineation?

There is no simple answer to these questions; in reality, *search for an entity* blends aspects of [SEARCH] and [SEEK]. However, in my view the perspectival difference should be reflected in the lexicon—as indeed it is in the *OED*’s entry for ‘search, *v.*’ (major senses I and II). For חִפֵּשׁ, my solution is to place instances like Proverbs 2:4 in a [SEEK] sense, but with a LU-to-frame link [SEEK].חִפֵּשׁ to [SEARCH].

6.4. Judicial uses

A number of the instances of חִקֵּר terms occur in contexts which are more or less judicial or forensic. For instance, Job claims in Job 29:16 that he explored the stranger’s “case” (רִיב)—a word that here denotes, as it often does, a legal case or legal process. In Job 13:9, a personal “exploration” is on view; but the context makes it clear that this is a divine legal examination.¹³⁹ A few other instances similarly describe a possible judicial setting, both divine (Job 34:24; Jer 17:10) and human (Prov 18:17).

Arguably, we could pose a distinct judicial sense for חִקֵּר, derived from [INVESTIGATE] or [EXAMINE PERSON]. However, it is not always a simple matter in the HB to decide whether a formal judicial situation is involved, or indeed what situations ought to be described as ‘forensic.’ Is the situation in Proverbs 18:17 a law-court scenario, or something less formal, given that the one who does the “examining” is the “companion” (רֵעַ) of the one examined? Deuteronomy 13:15[14] involves a similar process of investigation, where the TOPIC is a moral issue with legal consequences; but again, is this a formal judicial setting?

Rather than posing distinct judicial senses, I have linked the relevant instances in my annotations to a [JUDICIAL INVESTIGATION] frame using the Evokes relation. In the terminology of *SDBH*, this amounts to treating the judicial nature of these instances as a “*contextual meaning*” (de Blois and United Bible Societies 2000, 21).

¹³⁹ Verses 6–8 set up this implication, but with a twist: Job has cast his three companions in the role of God’s legal defence team, questioning how they would “plead the case” (רִיב) for God (v. 8). Then in verse 9, he abruptly turns the situation on its head, so that God is now “examining” (חִקֵּר) Job’s companions; but the situation is still judicial.

7. *Frames, lexical units, and annotations*

We are now in a position to define a set of frames that cover the instances of חקר in the HB. From the preceding discussion, it is clear that such a set cannot realistically express every nuance in the range of meanings; if we attempted as much, the result would be an unworkable mass of frames with a tangled web of relations. Similarly, there will often be several possibilities for grouping the variations. Consider the uses of חקר with a personal object. Is חקר איש more like בִּחַן אִישׁ “test a person,” or חקר אֶרֶץ “search a territory”? In fact, it is like both of these, but in different ways.

With חקר terms, the central cluster of meanings consists of the frames [EXPLORE], [SEARCH], [INVESTIGATE], and [EXAMINE PERSON]. Of the forty instances, thirty five evoke one of these conceptual structures; indeed, Proverbs 25:3 evokes two ([EXPLORE] and [EXAMINE PERSON]), and is annotated in both. The remaining five are spread across [UNKNOWN], [UNDERSTANDING], and [BECOME AWARE OF].

For each frame, I will provide a description and a list of all the relevant FEs, along with any frame relations. Where the FE label has an abbreviation, it is provided in parentheses. The frame description is followed by an analysis of the LUs that evoke the frame. For each LU, there may be a brief description, including LU-to-frame relations, but the main features are a list of all the annotated instances, and an RCG-based LU valence description based on these annotations. Due to the difficulty of presenting the data in printed form, the annotations only display the FEs expressed in each context, as well as null instantiation indicators; the detailed grammatical data is not shown. However, CTs and CRs are shown in the valence descriptions. The target constituent in annotations and in valence descriptions is indicated by an asterisk (*).

A few details in my annotation system need explanation. After each verse reference, there follow zero or more CT labels. In most cases, there is one construction in which the target (i) is a unit, and (ii) is dependent (in Langacker’s sense: ch. 4 §3.3) on another unit of the construction—that is, where that second construction unit expresses a FE in the target’s frame. For instance, in the Transitive Infinitive Predication חָקֹר אֶת־הָעִיר (2 Sam 10:3), the Head חָקֹר is dependent on the construction Object אֶת־הָעִיר, which instantiates the AREA FE. In such cases, the first CT label after the verse reference

designates this construction. If the target is autonomous, as happens frequently with חִקָּר, the first CT label will be replaced with Ø.

This main CT label may be followed by others, which relate to other FEs that are grammatically connected to the target. These CTs specify constructions in which the target participates as an autonomous element, and which contain a FE-instantiating element that depends on the target. For instance, שְׁבַעֲהָ-חֲדָשִׁים מְקִצָּה in Ezekiel 39:14 is an Adjunct of יְחִקְרוּ, and instantiates the peripheral TIME FE in [EXPLORE]; the CT for this is listed as מֶזֶן-PP Adjunct.

After the verse reference and CT labels, any further annotation-specific information will be listed; for instance, any annotation-to-frame relations.

Finally, in some instances, particularly with the Noun חִקָּר, a core FE appears close to the target, but neither constituent depends on the other in any construction. Technically, this is DNI, and it is listed as such in the LU report. I nevertheless tag such a constituent with CT and FE labels, but no CR. In the annotation, the FE is shown along with a DNI indicator; for instance, [EXAMINEE(DNI) מְלָכִים]. This is simply to facilitate identifying the contextually salient FE when scanning the annotation.

7.1. [EXPLORE]

Description: A rational agent, or something construed as such, moves purposefully around a physical area or space in order to observe and come to a knowledge of its contents or features. There may be a more specific purpose involved, but the general purpose is still related to gaining knowledge of the area. The exploring process is usually a telic one, so that a perfective sense will generally be complete.

Where the purpose is specifically to locate, or ascertain the existence of, some sought entity within the area, the more specific child frame [SEARCH] is used.

Core FEs:

- EXPLORATION (EXPLN): The process profiled by the target term
- AREA: The physical region that is explored
- EXPLORER (EXPLR): The agent who undertakes the exploration

Peripheral FEs:

- EXTENT: Specifies the extent to which the area is explored
- TIME: The time at which or during which the exploration occurs

- INSTRUMENT (INSTR): An entity manipulated by the explorer to explore the area
- PURPOSE (PURP) (extra-thematic): Though the implicit purpose is always to gain a knowledge of the area, the purpose may be expressed specifically

Frame relations:

- Inherited by [SEARCH]

LUs in the HB: חָקַר, נָחַקַר, and חִקֵּר; total instances: 7

1. [EXPLORE]. חָקַר. The LU valence description is shown in table 10.7.

Judg 18:2a (Transitive Infinitive Predication)

וַיִּשְׁלְחוּ בְנֵי־דָן מִמִּשְׁפַּחָתָם חֲמִשָּׁה אַנְשִׁים מִקְצוֹתֵם אַנְשִׁים בְּנֵי־חֵיל
מִצָּרְעָה וּמֵאֶשְׁתָּאֵל לְרַגֵּל אֶת־הָאָרֶץ וְ[EXPLN *-חֲקֹךְ - AREA] [EXPLR(DNI)]
[ה-] וַיֹּאמְרוּ אֲלֵהֶם לָכוּ חֲקְרוּ אֶת־הָאָרֶץ וַיָּבֹאוּ הָרֶאֱפָרִים
עַד־בֵּית מִיכָה וַיְלִינוּ שָׁם:

Judg 18:2b (Transitive Verb Clause)

וַיִּשְׁלְחוּ בְנֵי־דָן מִמִּשְׁפַּחָתָם חֲמִשָּׁה אַנְשִׁים מִקְצוֹתֵם אַנְשִׁים בְּנֵי־חֵיל
מִצָּרְעָה וּמֵאֶשְׁתָּאֵל לְרַגֵּל אֶת־הָאָרֶץ וּלְחַקְרָהּ וַיֹּאמְרוּ אֲלֵהֶם לָכוּ
[EXPLN [2MPL:EXPLR *-חֲקְרוּ] [אֶת־הָאָרֶץ AREA] [וַיָּבֹאוּ הָרֶאֱפָרִים AREA]]
עַד־בֵּית מִיכָה וַיְלִינוּ שָׁם:

2 Sam 10:3 (Transitive Infinitive Predication)

וַיֹּאמְרוּ שְׂרֵי בְנֵי־עֲמֹן אֶל־חֲנֹן אֲדֹנֵיהֶם הַמִּכְבֵּד דָּוִד אֶת־אֲבִיךָ בְּעִינֶיךָ
כִּי־שָׁלַח לָךְ מְנַחֲמִים הָלֹא בְּעֵבֹר [EXPLN *-חֲקֹר] [אֶת־הָעִיר AREA]
וּלְרַגֵּל וּלְהַפְכִּיחַ שָׁלַח דָּוִד [אֶת־עַבְדִּי EXPLR(DNI)] אֵלֶיךָ:

1 Chr 19:3 (Transitive Infinitive Predication)

וַיֹּאמְרוּ שְׂרֵי בְנֵי־עֲמֹן לְחֲנֹן הַמִּכְבֵּד דָּוִד אֶת־אֲבִיךָ בְּעִינֶיךָ כִּי־שָׁלַח לָךְ
מְנַחֲמִים הָלֹא בְּעֵבֹר לְ[EXPLN *-חֲקֹר] [וּלְהַפְּךָ וּלְרַגֵּל [הָאָרֶץ AREA]]
בָּאוּ [עַבְדִּי EXPLR(DNI)] אֵלֶיךָ: פ

2. [EXPLORE]. נָחַקַר. The *nip'al* is a simple passive equivalent of the *qal*, so that the AREA is usually the trajector, and the EXPLORER may be more easily backgrounded. The LU valence description is shown in table 10.8.

Jer 31:37 (Passive Clause)

כֹּה אָמַר יְהוָה אֱסִימוּ שְׁמַיִם מְלֵמְעָה וְ[EXPLN *-יִחְקְרוּ] [מוֹסְדֵי־אָרֶץ לְמִטָּה AREA] גַּם־אֲנִי אֶמְאֵס בְּכָל־זֶרַע יִשְׂרָאֵל עַל־כָּל־אֲשֶׁר
עָשׂוּ נְאֻם־יְהוָה: ס [EXPLR CNI]

Jer 46:23 (Passive Clause)

כָּרְתוּ יַעֲרֶה נְאֻם־יְהוָה כִּי לֹא [EXPLN [3MSG:AREA חִיקֵּר]] כִּי רַבּוּ
מֵאַרְבֵּה וְאִין לָהֶם מִסְפָּר: [EXPLR CNI]

3. [EXPLORE].חִקֵּר. The LU valence description is shown in table 10.9.

Prov 25:3 (Ø, with ל-PP Adjunct)

[שָׁמַיִם AREA(DNI) [לָרוֹם EXTENT] [וְאַרְצָן AREA(DNI) [לְעֵמֶק
[EXPLR INI] [חִקֵּר: EXPLN] [מְלָכִים אֵין EXTENT]

Table 10.7 Valence description for [EXPLORE].חִקֵּר

	4x	EXPLORER	EXPLORATION	AREA	Other
Trans. Verb Cl. (1x)		Sbj	V	Obj	
	1x	VInfl	*V	את-PP	
Trans. Inf. Pred. (3x)		-	Inf	Obj	
	1x	DNI	*Inf	PrnSfx	
	1x	DNI	*Inf	את-PP	
	1x	DNI	*Inf	NP	

Table 10.8 Valence description for [EXPLORE].נִחְקֵר

	2x	EXPLORER	EXPLORATION	AREA	Other
Passive Cl. (2x)		-	V	Sbj	
	1x	CNI	*V	NP	
	1x	CNI	*V	VInfl	

Table 10.9 Valence description for [EXPLORE].חִקֵּר

	1x	EXPLORER	EXPLORATION	AREA	Other
Ø (1x)	-	-	-		
	1x	INI	*N	DNI	EXTENT: ל-PP (NP) (1x)

Based on this analysis of [EXPLORE], we can see that the most salient FE for חִקֵּר terms in this frame, apart from the process of EXPLORATION itself, is the AREA. Indeed, the only instance in which the AREA

is not instantiated is Proverbs 25:3 (חֲקֹר), and there it is contextually accessible (DNI). The EXPLORER is once indexed by the Verb inflection; otherwise, it is omitted by DNI (3x) or CNI (2x), and only once is it omitted by INI—again, in Proverbs 25:3. Both AREA and EXPLORER are thus highly salient; but the Noun חֲקֹר facilitates a narrower focus on the process itself.

7.2. [SEARCH]

Description: A rational agent, or something construed as such, moves around a physical area or space trying to locate, or ascertain the existence of, some preconceived sought entity within the area. [SEARCH] and [SEEK] are alternate perspectives on [SEEK SCENARIO]: the primary landmark in the former is the AREA, and in the latter is the SOUGHT ENTITY.

Core FEs:

- SEARCH: The process profiled by the target term
- AREA: The physical region in which the search is undertaken
- SEARCHER: The agent who undertakes the process of searching
- SOUGHT ENTITY (SOUGHT): The preconceived object/entity that the searcher is trying to locate, or the type of entity for which the searcher is seeking an instance

Peripheral FEs:

- EXTENT and TIME: As for [EXPLORE]
- INSTRUMENT (INSTR): An entity manipulated by the explorer to explore the area; e.g., נֶר (Zeph 1:12)

Frame relations:

- Inherits from [EXPLORE]

LUs in the HB: חֲקֹר; total instances: 2

1. [SEARCH]. חֲקֹר. The LU valence description is shown in table 10.10.

Ezek 39:14 (Intransitive Verb Clause, with מִן-PP Adjunct)

וְאִנְשֵׁי תַמִּיד יִבְדְּלוּ עֲבָרִים בְּאֶרֶץ מִקְבְּרִים אֶת־הָעֲבָרִים אֶת־הַנּוֹתְרִים
עַל־פְּנֵי הָאֶרֶץ לְטַהֲרָהּ מִ[קֶּצֶה שְׁבַע־חֳדָשִׁים] [TIME
[SOUGHT DNI] [AREA DNI] [SEARCH [3MPL:SEARCHER

Job 28:3 (Transitive Verb Clause, with ל-PP Adjunct)

קִין שֵׁם לַחֲשֹׁךְ וְלִ[כָּל־תְּכֵלֶת] [EXTENT [הוּא SEARCHER] [חֲקֹר
[SOUGHT DNI] [AREA אֶפֶל וְצִלְמוֹת: [SEARCH

Table 10.10 Valence description for [SEARCH]. חִקֵּר

	2x	SEARCHER	SEARCH	AREA	SOUGHT ENTITY	Other
Trans. Verb Cl. (1x)		Sbj 1x Prn	V *Part	Obj NP	- DNI	EXTENT: לְ-PP (NP) (1x)
Intr. Verb Cl. (1x)		Sbj 1x VInfl	V *V	- DNI	- DNI	TIME: מֶנְ-PP (NP) (1x)

The lower ‘coreness’ status of the SOUGHT ENTITY, compared with the AREA, is reflected in these instances: although they evoke [SEARCH], in neither one is the SOUGHT ENTITY instantiated in the חִקֵּר Clause itself. This may also be a symptom of the fact that חִקֵּר is primarily an [EXPLORE] term.

7.3. [INVESTIGATE]

Description: An investigator conducts an intensive mental investigation of some topic, for the purpose of understanding it. For some terms in [INVESTIGATE], the topic is construed as an area to be explored and known.

Core FEs:

- INVESTIGATION (INVN): The process profiled by the target term
- TOPIC: The issue, question, or field of enquiry that is investigated
- INVESTIGATOR (INVR): The agent who conducts the process of mental investigation

Peripheral FEs:

- EXTENT: Specifies the extent to which the topic is investigated; for example, הַיֵּטֶב “well”
- TIME: The time at which or during which the investigation occurs

Frame relations:

- Inherited by [EXAMINE PERSON]
- Precedes [BECOME AWARE OF], [COME TO UNDERSTAND]

LUs in the HB: חִקֵּר, חִקֵּר, חִקֵּר, חִקֵּר; total instances: 11

1. [INVESTIGATE]. חָקַר. The LU valence description is shown in table 10.11.

LU-to-frame relations:

- Evokes [EXPLORE]

Deut 13:15[14] (Intransitive Verb Clause)

וְדִרְשֶׁתָּ וְ[2MSG:INVR חָקַרְתָּ] וְשָׁאַלְתָּ [EXTENT הַיָּטֵב] וְהִנֵּה
אִמֶּת נִכּוֹן הַדָּבָר נַעֲשֶׂתָה הַתּוֹעֵבָה הַזֹּאת בְּקִרְבְּךָ: [TOPIC DNI]

Job 5:27 (Transitive Verb Clause)

הִנֵּה־זֹאת [1PL:INVR *חָקַרְנוּ] [TOPIC הָ] בְּזִי־הִיא שְׁמַעְנָה
וְאַתָּה דַע־לֶךְ: פ

Job 28:27 (Transitive Verb Clause): Evokes [EXPLORE]

אֲזִי רָאָה וַיִּסְפְּרָה הַכִּינָה וְגַם־[3MSG:INVR *חָקַרְ] [TOPIC הָ:]

Job 29:16 (Transitive Verb Clause): Evokes [JUDICIAL INVESTIGATION]

אֲבֹ אֲנֹכִי לֹא־בִיּוֹגִים וְרַב לֹא־יִדְעָתִי [1SG:INVR *אֶחָקַרְ] [TOPIC הוֹ:]

Job 32:11 (Transitive Verb Clause)

הֵן הוֹחֵלְתִי לְדַבְרֵיכֶם אֲזִין עַד־תְּבוֹנְתֵיכֶם עַד־[2MPL:INVR *תִּחְקְרוּן] [TOPIC מְלִין:]

Prov 23:30 (Transitive Infinitive Predication)

לְמֹאחָרִים עַל־הֵיזֵן לְ[בָּאִים INVR(DNI)] לְ[2MSG:INVR *חָקַר] [TOPIC מְסֻדָּ:]

Prov 25:2 (Transitive Infinitive Predication)

כָּבֹד אֱלֹהִים הִסְתַּר דְּבַר וּכְבֹד [מְלָכִים INVR(DNI)] [TOPIC דְּבַר:]

2. [INVESTIGATE]. נִחַקַר. The *nip'al* is a simple passive equivalent of the *qal*, so that the TOPIC is usually the trajector, and the INVESTIGATOR may be more easily backgrounded. The LU valence description is shown in table 10.12.

LU-to-frame relations:

- Evokes [EXPLORE]

1 Kgs 7:47 (Passive Clause)

וַיִּנַּח שְׁלֹמֹה אֶת־כֶּלֶה־הַבָּלִים מִרַב מֵאֹד מֵאֹד לֹא [NIPAL:INVR *נִחַקַר] [TOPIC מְשַׁקֵּל]
הַנִּחָשֶׁת: [INVR CNI]

2 Chr 4:18 (Passive Clause)

וַיַּעַשׂ שְׁלֹמֹה בְּלִי-הַבָּלִים הָאֵלֶּה לְרֹב מְאֹד כִּי לֹא [INVN חִקֵּר*] [מְשַׁקֵּל
הַנְּחֹשֶׁת: TOPIC] פ [INVR CNI]

Table 10.11 Valence description for [INVESTIGATE]. חִקֵּר

	7x	INVESTIGATOR	INVESTIGATION	TOPIC	Other
Trans. Inf.	-		Inf	Obj	
Pred. (2x)	2x	DNI	*Inf	NP	
Trans. Verb Cl.	Sbj		V	Obj	
(4x)	3x	VInfl	*V	PrnSfx	
	1x	VInfl	*V	NP	
Intr. Verb Cl.	Sbj		V	-	
(1x)	1x	VInfl	*V	DNI	EXTENT: Adv (1x)

Table 10.12 Valence description for [INVESTIGATE]. נִחְקֵר

	2x	INVESTIGATOR	INVESTIGATION	TOPIC	Other
Passive Cl. (2x)	-		V	Sbj	
	2x	CNI	*V	NP	

3. [INVESTIGATE]. חִקֵּר. The LU valence description is shown in table 10.13.

LU-to-frame relations:

- Evokes [EXPLORE]

Eccl 12:9 (Transitive Verb Clause)

וַיֵּתֶר שְׁהִיָּה קִהְלֵת חֲכָם עוֹד לְמַדְיָעַת אֶת־הָעָם וְאִזְנִי וְ[חִקֵּר-
[TOPIC מְשַׁלֵּים הַרְבֵּה: TOPIC] תִּקְנִי [INVN [3MSG:INVR

4. [INVESTIGATE]. חִקֵּר. The LU valence description is shown in table 10.14.

LU-to-frame relations:

- Evokes [EXPLORE]

In most cases in the HB, [EXAMINE PERSON] has an ethical dimension: investigating a person to see whether they are morally upright.

Core FEs:

- EXAMINATION (EXAM): The process profiled by the target term
- EXAMINEE (EXEE): The person being examined; or alternatively, some aspect of the person (e.g., דִּרְכִּים), or a body part that stands metonymically for the person and the aspect of their personality being examined (e.g., לֵב, כְּלִיָּהּ)
- EXAMINER (EXAMR): The agent who conducts the examination

Peripheral FEs:

- EXTENT: Specifies the extent to which the person is examined
- DEGREE (DEG): Specifies the degree to which the examiner undertakes the process; e.g., גָּדוֹל (Judg 5:16)
- TIME: As for [INVESTIGATE]
- PURPOSE (PURP) (extra-thematic): Words in this frame sometimes occur with an expression of the purpose for, or desired outcome of, the examination, which may be more specific than simply coming to a knowledge of the person or some aspect of their personality

Frame relations:

- Inherits from [INVESTIGATE]

LUs in the HB: חֵקֶר, חָקַר; total instances: 16

1. [EXAMINE PERSON]. חֵקֶר. The LU valence description is shown in table 10.15.

LU-to-frame relations:

- Evokes [EXPLORE]

1 Sam 20:12 (Transitive Verb Clause, with כ-PP Adjunct)

וַיֹּאמֶר יְהוֹנָתָן אֶל-דָּוִד יְהוָה אֱלֹהֵי יִשְׂרָאֵל כִּי- [1SG:EXAMR חֵקֶר*] [EXAM אֶת-אָבִי] [EXEE מִן-הַשְּׂלִישִׁית] [TIME] [PURP] וְהָיָה טוֹב אֶל-דָּוִד וְלֹא-אֶזְכָּר אֶשְׁלַח אֵלָיוּ וְגַלִּיתִי אֶת-אֲזִנִּי:

Jer 17:10 (Transitive Participle Predication, with ל-PP Adjunct): Evokes [JUDICIAL INVESTIGATION]

אֲנִי יְהוָה [EXAMR] [EXAM חֵקֶר*] [EXEE לֵב] [PURP] בָּחַן בְּלִיּוֹת וְלֹא-תַתּ לְאִישׁ (בְּדַרְכּוֹ) <בְּדַרְכָּיו> כִּפְרִי מַעַלְלָיו: [PURPOSE] ס

Ps 139:1 (Transitive Verb Clause)

לִמְנַצֵּחַ לְדוֹד מִזְמוֹר יְהוָה [EXAM [2MSG:EXAMR -חֵקֶרְתָּ*]] [EXEE גִּי] וַתֵּדַע:

Ps 139:23 (Transitive Verb Clause)

שְׂרַעְפִּי: וְרָאָה אִם־דִּרְדְּרָה־עָצָב בִּי וְנִחַנִּי בְּדֶרֶךְ עוֹלָם:
[EXAM [2MSG:EXAMR -חֻקְרָה*]] [-גִּי EXEE] אֶל וְדַע לִבִּי בַּחֲנִנִי וְדַע

Job 13:9 (Transitive Verb Clause): Evokes [JUDICIAL INVESTIGATION]

הַטּוֹב כִּי־[חֻקְרָה*] [EXAM [3MSG:EXAMR אֶתְכֶם EXEE] אִם־כִּהְיִתָּל
בְּאֵנוּשׁ תִּהְיֶה־לּוֹ בּוֹ:

Prov 18:17 (Transitive Verb Clause): Evokes [JUDICIAL INVESTIGATION]

צִדִּיק הָרֹאשׁוֹן בְּרִיבּוֹ (יְבֹא־) <וְבֹא־> רָעָהּ וְ[חֻקְרָה*] [EXAM
[EXEE :-ו]] [EXAM

Prov 28:11 (Transitive Verb Clause)

חֲכָם בְּעֵינָיו אִישׁ עָשִׂיר וְ[חֻקְרָה*] [EXAMR מִבֵּין EXAM] [-גִּי: EXEE]

Lam 3:40 (Intransitive Verb Clause)

נִחַפְּשָׁה [דִּרְכֵינוּ EXEE(DNI)] וְ[חֻקְרָה*] [EXAM [1SG:EXAMR וְנִשְׁוּבָה
עַד־יִהְיֶה:

Table 10.15 Valence description for [EXAMINE PERSON]. חֻקְרָה

	8x	EXAMINER	EXAMINATION	EXAMINEE	Other
Trans. Part.		-	Part	Obj	
Pred. (1x)	1x	NP	*Part	NP	PURPOSE: ל־PP (Inf. Pred.) (1x)
Trans. Verb Cl. (6x)		Sbj	V	Obj	
	3x	VInfl	*V	PrnSfx	
	2x	VInfl	*V	את-PP	TIME: כ-PP (NP) (1x)
	1x	NP	*V	PrnSfx	
Intr. Verb Cl. (1x)		Sbj	V	-	
	1x	VInfl	*V	DNI	

2. [EXAMINE PERSON]. חֻקְרָה. The LU valence description is shown in table 10.16.

LU-to-frame relations:

- Evokes [EXPLORE]

Table 10.16 Valence description for [EXAMINE PERSON]. חִקָּר

	8x	EXAMINER	EXAMINATION	EXAMINEE	Other
Cnst.-		-	Cnst	PCnst	
PCnst.	1x	ל-PP (NP)	*N	NP	DEGREE: Nonverbal Classifying Complement (NP) (1x)
Phr. (1x)					
Ø (7x)		-	-	-	
	2x	INI	*N	ל-PP (NP)	
	5x	INI	*N	DNI	EXTENT: DNI (1x)

Judg 5:16 (Construct-Postconstruct NP, with Nonverbal Classifying Clause, ל-PP Adjunct)¹⁴⁰

לְמָה יִשְׁבֹּת בֵּין הַמְשַׁפְּתִים לְשֹׁמֵעַ שְׂרָקוֹת עֲדָרִים לְ-פִלְגֹּת רְאוּבֵן
[EXEE: לָב] [EXAM *חִקְרִי] [DEG גְּדוּלִים] [EXAMR

Isa 40:28 (Ø, with ל-PP Adjunct)

הֲלוֹא יָדַעְתָּ אִם-לֹא שָׁמַעְתָּ אֱלֹהֵי עוֹלָם יְהוָה בּוֹרֵא קְצוֹת הָאָרֶץ לֹא
יִעָרֵף וְלֹא יִיגַע אֵין לְ-תְבוּנָתוֹ: [EXAM *חִקָּר] [EXEE INI] [EXAMR INI]

Ps 145:3 (Ø, with ל-PP Adjunct)

יְגֹדֵל יְהוָה וּמַהֲלֵל מְאֹד וְלְ-גְדֻלָּתוֹ [EXEE] אֵין [EXAM *חִקָּר: INI] [EXAMR

Job 5:9 (Ø)

עֲשֵׂה גְדֻלּוֹת [EXEE(DNI)] וְאֵין [EXAM *חִקָּר] נִפְלְאוֹת עַד-אֵין מִסֹּפֶר:
[EXAMR INI]

Job 9:10 (Ø)

עֲשֵׂה גְדֻלּוֹת [EXEE(DNI)] עַד-אֵין [EXAM *חִקָּר] וְנִפְלְאוֹת עַד-אֵין
מִסֹּפֶר: [EXAMR INI]

Job 34:24 (Ø): Evokes [JUDICIAL INVESTIGATION]

יִרְעַ [3MSG:EXAMR(DNI)] כְּבִירִים [EXEE(DNI)] לֹא- [EXAM *חִקָּר] יַעֲמֵד אַחֲרֵים תַּחְתָּם:

¹⁴⁰ Note that in the first three instances, a core FE is instantiated, but in an Adjunct construction: EXAMINER in Judges 5:16, and EXAMINEE in Isaiah 40:28 and Psalm 145:3.

Job 36:26 (Ø)

הַזֹּאֵל שְׂגִיָּא וְלֹא נִדְּעַ [מִסְפָּר שְׁנָיו] [EXEE(DNI) וְלֹא-] [EXAM : חֲקָר :]
[EXAMR INI]

Prov 25:3 (Ø): Evokes [EXPLORE]

שְׁמִים לְרוֹם וְאַרְצָא לְעֶמֶק וְ[לֵב מְלָכִים] [EXEE(DNI) אֵין] [EXAM : חֲקָר :]
[EXAMR INI] [EXTENT DNI]

The [EXAMINE PERSON] frame has the greatest number of instances for חֲקָר in the HB. There are significant differences between the use of the *qal* Verb and that of the Noun, though they evoke the same process. With the Verb, the EXAMINER is expressed or indexed in every occurrence, and the EXAMINEE (or some representative aspect or body part) is expressed in every instance but one, where it is omitted by DNI—assuming indeed that דְּרָכָיו is not part of the חֲקָר construction in Lamentations 3:40.

In seven of the eight instances of the Noun, the EXAMINER is omitted by INI, and the EXAMINEE is either omitted by DNI or expressed in an Adjunct construction. These seven are all negated. The exceptional instance—also the only positive use—is Judges 5:16, in which the Noun is linked directly to an EXAMINEE's לֵב, and the EXAMINER is specified in a ל-PP Adjunct construction.

7.5. [BECOME AWARE OF]

Description: Words in this frame describe the process in which a rational discoverer adds some phenomenon to their model of the world. The phenomenon may be either information on some abstract topic, or a physical entity; in the latter case, the discovery typically relates to its existence and/or location. The discoverer generally acquires the phenomenon without having sought it specifically—though the discovery event may result from purposeful investigation in a broader field (physical or abstract).

This frame will contain words whose image-schematic basis lies in the realm of physical perception (e.g., רָאָה), since “creatures often become aware of things by perceiving them” (FrameNet 1.3, [BECOMING AWARE]).

[BECOME AWARE OF] differs from [COME TO UNDERSTAND] in that the latter views the event as relating to the cogniser's understanding of the whole field of investigation, whereas [BECOME AWARE OF] focuses on some newly discovered information or entity within the

field. The frame differs from [LOCATE] in that the latter begins with a preconceived sought entity or sought fact.

Core FEs:

- DISCOVERY EVENT (DISC): The event profiled by the target words, in which the cogniser becomes aware of the phenomenon
- PHENOMENON (PHEN): The physical entity or abstract topic of which the cogniser gains an awareness
- COGNISER (COGN): The rational agent who comes to an awareness of the phenomenon

Peripheral FEs:

- FIELD: The general area (whether physical or abstract) within which the cogniser has become aware of the phenomenon. The discovery event may be a result of the intentional investigation of this field, though without the phenomenon as the preconceived goal.

Frame relations:

- Succeeds [INVESTIGATE]

LUs in the HB: חָקַר; total instances: 1

1. [BECOME AWARE OF]. חָקַר. The LU valence description is shown in table 10.17.

LU-to-frame relations:

- Evokes [EXPLORE]

Ps 44:22[21] (Transitive Verb Clause): Evokes [EXAMINE PERSON]

אִם־שָׁכַחְנוּ שֵׁם אֱלֹהֵינוּ וְנִפְרָשׁ כִּפְּיֵנוּ לֹא־לָא זָר׃ הֲלֹא [COGN אֱלֹהִים] חָקַר [PHEN זָאת] [DISC יִיחָקֶר*]
כִּי־הוּא יָדַע תַּעֲלֻמוֹת לִבִּי׃

Table 10.17 Valence description for [BECOME AWARE OF]. חָקַר

	1x	COGNISER	DISCOVERY EVENT	PHENOMENON	Other
Trans. Verb		Sbj	V	Obj	
Cl. (1x)	1x	NP	*V	NP	

7.6. [UNDERSTANDING]

Description: A state of affairs in which a cogniser has some understanding (or lack of understanding) with regard to some topic, which

may be a physical area, a state of affairs, an abstract topic or question, etc. Typical terms include *יִדְעַ* and *בִּינָה*.

This may be evoked as part of a complex event consisting of the events [INVESTIGATION] and [COME TO UNDERSTAND], followed by the [UNDERSTANDING] state.

Core FEs:

- UNDERSTANDING (UNDERSTG): The state usually profiled by the frame, which is (or is not) attained by the cogniser
- TOPIC: The area, state of affairs, or abstract field of investigation which is the scope of the cogniser's understanding
- COGNISER (COGN): The rational agent who has (or lacks) an understanding of the topic

Frame relations:

- Succeeds [COME TO UNDERSTAND]

LUs in the HB: *חֵקֶר*; total instances: 1

1. [UNDERSTANDING].*חֵקֶר*. The single instance of this LU involves FE conflation, with *חֵקֶר* itself denoting both the state of understanding and that which is understood. Thus, the LU incorporates both UNDERSTANDING and TOPIC in its profile. The LU valence description is shown in table 10.18.

LU-to-frame relations:

- Evokes [EXPLORE]

Job 8:8 (Construct-Postconstruct Noun Phrase)

בִּי־שֹׂא־לֵנָא לְדֹר רִישׁוֹן וְכוּנִין לְ[*-חֵקֶר] [UNDERSTG, TOPIC] אֲבוֹתָם: [COGN]

Table 10.18 Valence description for [UNDERSTANDING].*חֵקֶר*

	1x	COGNISER	UNDERSTANDING	TOPIC	Other
Cnst.-PCnst. Phr.		PCnst	Cnst	Cnst	
(1x)	1x	NP	*N	*N	

7.7. [UNKNOWN]

Description: This frame contains mostly stative (referential or modifying/adjectival) words, which express the unknown status of a certain

phenomenon. The cogniser, for whom the phenomenon is unknown, is often an offstage participant, and thus not conceptualised.

Core FEs:

- UNKNOWN STATUS (UNKN): The unknown status of the phenomenon
- PHENOMENON (PHEN): The entity (physical or abstract) or state of affairs that is unknown

Peripheral FEs:

- COGNISER (COGN): The rational agent for whom the phenomenon is unknown
- FIELD: The broader area (physical or abstract) within which the unknown phenomenon is located

LUs in the HB: חֶקֶר; total instances: 3

1. [UNKNOWN].חֶקֶר. For both חֶקֶר and מְחַקֵּר in [UNKNOWN], the unknown status and phenomenon are both expressed by the target term, and incorporated in the LU concept profile. The LU valence description is shown in table 10.19.

LU-to-frame relations:

- Evokes [EXPLORE]

Job 11:7 (Construct-Postconstruct Noun Phrase): Evokes [EXAMINE PERSON]

הַ[חֶקֶר-*] [PHEN,UNKN] [אֶלֹּהִים] [field] תִּמְצָא אִם עַד-תִּכְלִית שְׂדֵי תִמְצָא:

Job 38:16 (Construct-Postconstruct Noun Phrase)

הַבָּאָה עַד-נִבְכִּיִּים וְ[חֶקֶר-*] [PHEN,UNKN] [אֶתְהוֹם] [FIELD] הִתְהַלֵּכְתָּ:

Table 10.19 Valence description for [UNKNOWN].חֶקֶר

	2x	UNKNOWN STATUS	PHENOMENON	FIELD	Other
Cnst.-PCnst.		Cnst	Cnst	PCnst	
Phr. (2x)	2x	*N	*N	NP	

2. [UNKNOWN].מְחַקֵּר. The LU valence description is shown in table 10.20.

LU-to-frame relations:

- Evokes [EXPLORE]

Ps 95:4 (Construct-Postconstruct Noun Phrase)

אֲשֶׁר בִּידוֹ [מְחַקֵּי*] [PHEN, UNKN] [אֶרֶץ FIELD] וְתוֹעֲפּוֹת הַרִים לוֹ:

Table 10.20 Valence description for [UNKNOWN]. מְחַקֵּר

	1x	UNKNOWN STATUS	PHENOMENON	FIELD	Other
Cnst.-PCnst.		Cnst	Cnst	PCnst	
Phr. (1x)	1x	*N	*N	NP	

8. Concluding remarks

8.1. Exploring, searching, and seeking

A number of significant conclusions about חקר and closely related terms have already emerged in §§5–7. I will finish with a few brief observations.

As we have seen, most חקר instances evoke one of [EXPLORE], [SEARCH], [INVESTIGATE], and [EXAMINE PERSON]. At the most general level, we could describe the common semantic content of חקר in this central meaning cluster as: “to traverse and observe an area with some (usually implicit) purpose related to gaining a knowledge of the area.” This definition includes figurative uses, though of course the words *traverse*, *observe*, and *area* receive metaphoric construals.

In some cases, the purpose is to ascertain the existence of a preconceived SOUGHT ENTITY within the area. I therefore agree with Van Hecke that חקר terms may evoke [SEARCH]; but we have nonetheless seen that they prototypically belong in [EXPLORE]. Indeed, חקר never actually appears in the HB in a construction with the SOUGHT ENTITY, aside from the resultative [BECOME AWARE OF] use found in Psalm 44:22[21].

However, there is perhaps a general pattern, which we saw with both חקר and חפש, that a resultative shift from [SEARCH] to [LOCATE] or [BECOME AWARE OF] tends to cause a shift in the word’s trajector/landmark profiling, so that the SOUGHT ENTITY comes to the fore and the AREA fades into the background.

Among חקר terms, חקֵּר stands out somewhat. First, it is used in the most complex of the minor senses of חקר terms. Second, the majority of its occurrences within the central meaning cluster are per-

sonal. Only one instance evokes [INVESTIGATE] (Prov 25:27), though if MT כְּבוֹדָם “their glory” is retained, this too is personal; and only one instance evokes [EXPLORE] (Prov 25:3), though this simultaneously evokes [EXAMINE PERSON]. This may be largely because of the distribution of חִקֵּר: all but two instances are in Psalms, Job, and Proverbs, and the remaining two are in poetic passages (Judg 5:16; Isa 40:28). The majority are also in impossibility-related אֵין constructions. Finally, the valence patterns for חִקֵּר in the central frames correspond with what we would expect with an event Noun: it profiles the same process as the Verbs, but tends to focus attention on this process alone, abstracted from participants in the process.¹⁴¹ Thus, for instance, the EXAMINER in [EXAMINE PERSON].חִקֵּר is more peripheral than in the other LUs in the frame.

Most of the frames associated with חִקֵּר, including the minor senses [BECOME AWARE OF] and [UNDERSTANDING], are found in the broader cognitive account and frame networks in chapter 9. The single exception consists of the three occurrences in [UNKNOWN]: two of חִקֵּר (Job 11:7; Job 38:16) and one of מְחִקֵּר (Ps 95:4). These differ from the other uses of חִקֵּר terms in that they denote not an action, but rather an object along with the property “unknown.”¹⁴² It is likely that this entrenched sense is the most detached from the central base-level meaning of חִקֵּר terms.

8.2. Methodology

Although the same level of meticulous analysis and detail perhaps cannot feasibly be applied to the entire BH lexicon, this study reveals something of both the potential and the limitations of some of the most recent methods of lexical semantics, particularly for the study of an ancient language.¹⁴³

My order of presentation is a little deceptive, for the process of defining frames and FEs, relating these to one another, assigning LUs, assigning occurrences to LUs, and annotating occurrences is not the final stage in the broader analytical endeavour. Rather, it runs in parallel through the entire process of semantic and grammatical analysis.

¹⁴¹ See ch. 6 §1.2.

¹⁴² Cf. table 4.3 on p. 95. Even with the [UNDERSTANDING] sense in Job 8:8, we saw that חִקֵּר denotes both an activity and the product of that activity.

¹⁴³ Further methodological comments will be reserved for the concluding chapter.

Indeed, the more detailed and even tedious FrameNet-like process greatly assists in untangling the most fundamental frame semantic problems, namely, working out what are the relevant frames, and which words participate in which frames. Defining FEs and assessing their relative prominence is particularly fruitful, because the 'core' syntactic elements in constructions headed by a relational term tend to correspond with the more salient participants in the frame evoked by the term.

One of the difficulties of my system is that it requires definite decisions to be made—and with an ancient language, of course, definite conclusions are often difficult. From one perspective, this is not a bad thing: it forces us at least to *wrestle* with precise questions of meaning, rather than avoiding them too quickly. Nevertheless, at times it does not sit well with the interpreter to sum up this wrestling by choosing one baldly singular meaning! There may be merit in allowing the same occurrence to be assigned to alternate possible senses—though this should not prevent us from ever forming conclusions.

To put it another way, given the problems with an ancient language, we essentially have two options when describing LUs. We can either avoid detail where certainty is not possible, providing definitions that are general and potentially ambiguous; or we can attempt precise descriptions, based on the resource we have available (including cross-linguistic typological and cognitive research), while also noting the points at which the descriptions may be speculative. Neither approach is necessarily superior for all purposes; but I believe that there is great benefit to be gained from the latter approach.

Finally, one approach which helps us to overcome some of these problems is that of cognitive metaphor analysis. If there are indeed cross-linguistic patterns which reflect ingrained mechanisms or tendencies in human cognition, mapping these patterns may provide 'leads' for exploring and testing both diachronic shift and synchronic polysemy for terms in BH. Indeed, the more commonly mappings appear across language families, the more confident we may be in proposing similar patterns in BH.

CHAPTER ELEVEN

חֶקֶר IN THE LEXICA

Having applied cognitive approaches, particularly frame semantics, to חֶקֶר terms, I will now briefly survey how חֶקֶר has been handled by other lexica. There have been a number of very competent recent surveys and critiques of BH lexica generally, and there is no need to repeat their insights (de Blois and United Bible Societies 2000, 9–17; O'Connor 2002; van Steenbergen 2002c, chap. 6;¹ 2003; Lübke 2003; van der Merwe 2004, 2006a, 2006b).²

1. Older lexica: BDB and HALAT/HALOT

As we turn to traditional lexica of BH, it should be noted that all the English-language lexica and theological dictionaries surveyed, both old and recent, suffer from the ambiguity of the gloss *search out*.³

For the *qal* Verb, BDB defines two main senses: (1) “*search (for)*,” with the sought item either as a following “accusative” or implicit; and (2) various subsenses for exploring, investigating, or examining, which are glossed “*search through, explore*” (used both literally and figuratively), “*search out*,” “*search*” (a man), and “*examining thoroughly*.” The first corresponds to my [SEEK], and the second to [EXPLORE]/[SEARCH]—though by my analysis, all the instances in (1) belong in (2).

Some of the *qal* subsenses rightly try to articulate the purpose of a “searching” activity; for instance, “*search* a man, find out his sentiments” for 1 Samuel 20:12, and “of *examining thoroughly*, so as to expose a weakness in a case” for Job 29:16 and Proverbs 18:17.⁴

¹ Van Steenbergen’s dissertation has more recently been published by SUN PReSS (van Steenbergen 2005).

² Van der Merwe, far more than the others in this list, brings a cognitive perspective to his surveys. See also his recent case study of applying cognitive linguistics to BH (van der Merwe 2006b), along with that of Hans Rechenmacher (2004).

³ See ch. 10 §1.4.

⁴ In Job 29:16, however, BDB’s interpretation seems to assume (probably wrongly) that the רִיב is the *opponent’s* case against the stranger, rather than the stranger’s defence (*contra* NRSV “and I championed the cause of the stranger”).

HALAT places all the *qal* instances in one over-arching sense, glossed *erforschen*, *auskundschaften*—or in *HALOT*, “to **explore, search out**.”⁵ The over-arching sense is followed by a fairly diverse list of specific translations for various instances and with various complements. BDB’s presentation of the data is more thoughtfully organised.

Both BDB and *HALAT/HALOT* group everything along the literal-figurative range together in one sense. For instance, *HALOT* includes Ezekiel 39:14, which is clearly a search of the land, together with a range of much more abstract uses (Deut 13:15[14]; Ps 44:22[21]; Prov 25:2; etc.)—all of them rather inadequately described as (exploring) “something.” While there is clearly a close semantic connection between the literal and figurative construals, they should be distinguished more carefully.

2. Theological dictionaries: TDOT and NIDOTTE

M. Tsevat’s summary of the senses of *qal* חָקַר, organised around the types of Subject and Object that appear with it, is very helpful, and his interpretations of the various uses are consistent and well-founded (TDOT V.149).

His comparison of חָקַר and בָּחַן, however, is off the mark. The assertion that “*ḥqr* stands for a purely cognitive and analytical examination and testing” depends too heavily on his proposed “basic” meaning “divide”;⁶ nevertheless, it is correct that חָקַר, in its [INVESTIGATION] sense, denotes an essentially mental activity. The bigger problem is his subsequent claim that “*bḥn* suggests intuitive comprehension,” so that חָקַר is “progressive and analytic” while בָּחַן is “instantaneous and holistic.”⁷ In several cases, בָּחַן clearly denotes testing a person (or their heart, words, ways, etc.), or even God, by putting them in a certain situation to see what effect it will have, or how they will respond (e.g., Gen 42:15; Ps 66:10–12; Job 7:18–19; 23:10; Zech

⁵ In fact, *HALOT* over-uses the (problematic) gloss “search out” in a way that does not render accurately the German in *HALAT*. For example, with the *qal* חָקַר *HALOT* uses “search out” for *auskundschaften*, *nachspüren*, and *ergründen*; and with the *pi’el* חָקַר *HALOT* has “search out” for *HALAT*’s *ersinnen* “devise, think up.”

⁶ Aitken (2003, 123) rejects Tsevat’s analysis as overly Aristotelian.

⁷ Bruce Waltke echoes Tsevat’s “intuitive” remark in an editorial addition to Oswalt’s entry for בָּחַן in *TWOT*.

13:9; Mal 3:10, 15). This is the reason for the frequent parallel with צָרַף “smelt”; indeed, Proverbs 17:3 shows that the figurative (and cognitive) use of בָּחַן can be compared directly with the process of putting unrefined precious metals into a fire. This is hardly “instantaneous and holistic” knowledge!

In fact, the contrast between בָּחַן and חִקֵּר, in their mental-figurative extensions, relates to their very different source frames: both connote a striving for understanding, but חִקֵּר is an essentially mental operation with a spatial image schema, whereas בָּחַן is a mental operation which nonetheless often involves placing the examinee in a difficult situation.

As we saw in chapter 10 §3.4, Tsevat’s treatment of the *nip’al* נִחְקֵר also must be qualified.

As a dictionary of theology and exegesis, *NIDOTTE* clearly has aims somewhat different from those of a traditional lexicon. In the entry for חִקֵּר (II.252–255), however, I cannot help but feel that ‘theology’ has won out over ‘dictionary’: we are taken on a tour through a range of passages and themes in the HB, motivated by the occurrences of חִקֵּר terms and the contexts in which they appear—yet we are not given a clear picture of the meanings of the terms themselves.

Section 2, the longest in the entry, is the most focused on the meaning and use of חִקֵּר itself. Unfortunately, it is repeatedly sidetracked by questions about “realizable” or “unrealizable” goals:

Does the root indicate that the Hebrews understood the semantic distinction as to whether or not the thing sought for is assumed to exist or be present? That is, is the object or goal presumed to exist or be available so that the quest is realizable, or is the existence of the object or condition something assumed not to exist or yet to be established? (II.252)

These questions are largely irrelevant to semantic analysis of חִקֵּר, especially as it turns out that the *qal*, *nip’al*, and Noun are each used with both realizable and unrealizable goals. Yet this apparently shows that “the Hebrews were aware of the above distinction” (II.253). This conclusion is trivial: one could scarcely imagine that the Hebrews, or any other language community, were *unable* to understand the distinction between “search—it is sure to be there” and “search—you’ll not find it.” Again, however, this has little to do with the meaning of חִקֵּר.

Apart from these criticisms, some of the broader exegetical and theological observations are helpful: for instance, that the combina-

tion וְדַרְשֶׁת וְחִקְרָת וְשֹׂאֵלֶת in Deuteronomy 13:15[14] functions to emphasise “the seriousness of the problem of idolatry,” and that according to the wisdom writers “the shape of moral character and the workings of the moral cosmos seem to lie beyond the grasp of the intellect” (II.253). The list of terms in the “investigation, exploration, searching, spying out” field is also useful.

3. *Modern lexica: DCH, Alonso Schökel, and SDBH*

The three lexica reviewed in this section are not merely ‘modern’ in that they were produced recently; each also aims to use modern method of lexical analysis. They are very different from one another, however, as their חקר entries illustrate.

3.1. *DCH (David Clines)*

The information provided for חקר in *DCH* (III.304–305) suffers from the much-criticised limitations of the dictionary’s methodology (Andersen 1995; Muraoka 1995a), in particular, the listing of data with little organisation or analysis. The bulk of the information provided is collocational data, which is useful raw material: words or phrases from the Hebrew text with translation glosses for each, roughly organised according to their relationship to the target term (e.g., <SUBJ> or <OBJ> for a Verb), along with occasional parallel or associated terms. As Muraoka observes (1995a, 90), this is the right approach for a semantic analysis, and provides a useful starting-point for a more in-depth study.⁸

There are very occasional brief explanations of a meaning; for instance, יָרַע בְּבִירִים לֹא־חָקַר (Job 34:24) is glossed and then explained “*he breaks the mighty ones (without) searching*, perh. without prior investigation or without number.” The expression אֵין חָקַר is also ex-

⁸ In reality, to those who have a fair knowledge of Hebrew and a capable Bible software package, the main benefit of this data and presentation is as a time-saver: at least initially, we do not need to search for the occurrences of a term and work through the hits. Also noteworthy is Muraoka’s observation that *DCH*’s provision of collocational data is no more linguistically advanced than *BDB*, which often notes words used in parallelism (synonymic or antonymic), along with word combinations. “This means that our predecessors, without using such modern technical terms as ‘paradigmatic’ and ‘syntagmatic,’ applied one of the basic principles of modern lexicographical science” (Muraoka 1995a, 90 n. 14).

plained, though unfortunately with an incorrect [LOCATE] sense: “it cannot be found.” Apart from such comments, the appearance is that there is very little semantic analysis—which fits Clines’s stated intent of providing raw data rather than imposing an interpretation.⁹

Contrary to this stated intent, however, there is inevitably a great deal of semantic analysis, both in the sense breakdown and in the translation glosses supplied (initial bold-face glosses, as well as more specific italicised translations for particular expressions).¹⁰ In this regard, the entries for חֲקַר are inadequate. Only one sense is given for the *qal* Verb: “search (out), explore, investigate.” As with BDB and HALAT/HALOT, the physical and figurative (purely cognitive) uses are lumped together. This is understandable, given Clines’s “avoidance . . . of marking certain usages as ‘figurative’ or ‘metaphorical’” (DCH I.15).

With חֲקַר, there is no such excuse for the lumping of senses: the entire range is included in a single sense glossed “searching (out); (object of) searching out, depth.” How can these all be the same sense? The first two glosses represent, respectively, an *action* and an *object*—typological categories with a very high cue-validity, and thus a high degree of distinctness.¹¹ “Depth” involves yet another developmental step from “(object of) searching out.”

Finally, very few potential synonyms are listed—only דָּרַשׁ “seek” and שָׁאַל “ask” for the *qal* (though יָדַע “know” is also mentioned as an associated term), and אָזַן (*pi.*) “weigh” for the *pi’ēl*.¹² As is generally the case in DCH, only terms that appear in very close proximity to חֲקַר somewhere in the HB, usually in parallel, are considered. Even allowing for this limitation, the list is extraordinary: שָׁאַל is a marginal candidate for ‘synonym,’ while a number of other terms that

⁹ “This Dictionary is therefore not simply a word-book. Its function is not primarily to tell the user the meaning of words. . . . Rather, the primary function of this Dictionary is to organize and rationalize the available data about Hebrew words, enabling readers to make their own decisions about the meaning of words in light of all the evidence, which has been arranged in such a way as to make that task feasible” (DCH I.26).

¹⁰ Muraoka criticises Clines for being self-contradictory on whether DCH is interested in the meanings of lexemes (Muraoka 1995a, 90).

¹¹ Cf. table 4.3 on p. 95.

¹² More synonyms are available through the entry for דָּרַשׁ; however, the אָזַן entry does not even mention חֲקַר (probably a reflection of the progressive production of the lexicon).

also occur near חקר are overlooked, including בחן, תור, רגל, and above all חפש.¹³

3.2. Alonso Schökel

Luis Alonso Schökel's *Diccionario bíblico hebreo-español* (1994), like DCH, groups all *qal* instances together in one major sense. However, Alonso Schökel provides a somewhat bewildering list of no less than fifteen glosses, including *descubrir* ("discover"), *indagar* ("investigate"), *explorar* ("explore"), *buscar* ("look for"), *inspeccionar* ("inspect"), *escudriñar* ("examine closely"), *sondear* ("sound out") and *catar* ("taste/examine").¹⁴ Most of these glosses are then repeated with one or more occurrences of חקר; presumably, they are contextual modulations of some common core sense, which is not described.

For identifying these contextual meanings, Alonso Schökel comments: "The meaning is differentiated or fine-tuned according to the complement." This is the right approach, though the organisation could be improved; for example, the first complement listed is "אֶת־הָאָרֶץ – el país, una zona, explorar, inspeccionar," citing Judges 18:2 and Ezekiel 39:14, while near the end of the list we find "אֶת־הָעִיר – la ciudad, explorar," with 2 Samuel 10:3. While I do not agree with all his renderings (e.g., *buscar* for Job 32:11), on the whole the translations are consistent and helpful.

Alonso Schökel's analysis of חקר improves on DCH by differentiating between (a) the act of investigating, and (b) the object of investigation, thus *secreto* or *misterio*. However, he adds a third sense for חקר with negation, which he translates *insondable* ("unfathomable"), *incalculable*, *impenetrable*. I have argued that the negated cases are instances of the first sense.

Finally, Alonso Schökel's lexicon is a significant improvement on DCH in its listed synonyms, namely, בחן, דרש, חפש, ידע, רגל *pi.*, and שאל—although ידע denotes a subsequent process/state to חקר.

¹³ John F. Elwolde (2003, 104 n. 2), in noting a number of limitations in DCH's paradigmatic analysis, criticises its pattern of usually going no further than the verse at hand in search of parallels. The criticism may be warranted; however, Elwolde's own essay seems to allow for almost complete freedom in discovering 'parallels' which apparently have lexicographical significance.

¹⁴ De Blois (de Blois and United Bible Societies 2000, 16) commends Alonso Schökel for providing descriptive phrases rather than glosses in many entries, but laments that not all entries are like this—חקר being a case in point.

3.3. *SDBH* (Reinier de Blois)

SDBH, developed by Reinier de Blois (de Blois and United Bible Societies 2000; de Blois 2002), is an original and highly-acclaimed BH lexicography project, and has done much to advance BH lexicography. Moreover, de Blois claims that his underlying framework is “based on cognitive linguistics,” and in particular, that its semantic domains correspond to the cognitive notion of categories (de Blois 2002, 8). It therefore warrants some more general comments.

There is much to like about this lexicon. The most innovative and powerful feature in *SDBH* is its distinction between “lexical” and “contextual” semantic domains, which results in a two-dimensional categorisation (de Blois and United Bible Societies 2000, 21, 23–25). Lexical domains relate to “lexical meaning,” which is the relatively stable semantic content brought by a lexeme to an utterance (and which corresponds to its dictionary senses). Contextual domains relate to “contextual meaning,” or the contribution of the context to the pragmatic value of the lexeme.¹⁵ The lexical domains in *SDBH* are arranged in an ontological hierarchy, whose most schematic concepts are Objects, Events, and Relationals. Contextual domains are a simple, unorganised list.

In Croft and Cruse’s terms, then, *SDBH* helpfully distinguishes between the default (minimal-context) construal(s) of a term and the types of contextual modulation, or contextual constraints, operative in each sense’s use in the HB. This fits remarkably well with Croft and Cruse’s characterisation of the construal process, and is the kind of model van der Merwe was looking for when he flagged the “urgent need for a more verifiable semantic as well as pragmatic model for the description of Old Hebrew” (van der Merwe 1987, 180).

SDBH also uses its lexical domains to represent metaphor. It is able to show the mental mappings operative both for metaphors that are “an integral part of the semantic framework of the language” and for those that are “somewhat more ‘accidental’” (de Blois 2002, 10).¹⁶

Notwithstanding its strengths, *SDBH*’s system of lexical domains is inherently limited. Umberto Eco, in his philosophical explorations of

¹⁵ De Blois traces the distinction between lexical meaning and contextual meaning to Louw 1991 (cf. de Blois and United Bible Societies 2000, 21).

¹⁶ In dictionary entries, metaphoric mappings are marked with a greater-than symbol (>) separating the source and target domains.

lexical and encyclopaedic semantics (Eco 1976, 1984), argues for a model of the lexicon which he calls *Model Q*. This model differs from many others, both ancient and modern, in that it does not assume that linguistic concepts can be arranged hierarchically in a simple tree (which he calls a *Porphyrrian tree*), with a genus divided by species, and species by sub-species, and so on. The reality is more complex, since there will invariably be alternative configurations and arrangements of parts of the tree, with no one arrangement *necessarily* (or ontologically) the correct one. A Model Q arrangement, by contrast, is a network, in which any node may potentially be connected to any other node—"a mass of nodes interconnected by various types of associative links," a structure that may grow in complexity almost without limit, "based on a process of *unlimited semiosis*" (Eco 1976, 122, emphasis original). FrameNet is, by virtue of its unlimited network of frame relations (and perhaps by accident), an instantiation of Eco's Model Q.

The entry for חקר illustrates the limitations. Each of the subsenses is placed in the lexical domain 'Know,' which contains "Events denoting knowledge." There is some justification for associating all these senses with Know: the purpose of "exploring" an AREA is to come to a knowledge of it. However, based on my analysis in chapter 9, we could equally assign some or all senses to Think (a sister to Know under Cognition), Search, See, and Move. Again, there is nothing wrong with the Know categorisation; but the presentation can give the impression that this is the *only* lexical category in which חקר properly belongs.

Indeed, we might also question whether the *ontological* categories on which SDBH's hierarchy of lexical domains is based are always the most important categories. For instance, Objects are distinguished from Events; and within Objects, there are seven subcategories: Creatures (Animals and People), Deities, Parts (of other objects), Vegetation, Products (Artifacts, Body Products, and Food), Scenery, and Substances. These categories are perfectly reasonable; but are we really to see them as fundamental to the cognitive categorisation system of BH speakers, as de Blois claims (de Blois 2002, §2.2.2)? Consider the Parts category, which consists of "all objects that cannot exist in isolation but are an integral part of another object and therefore usually occur as part of an associative construction (branch of a tree, wing of a dove, etc.), or require a possessive pronoun (my hand, her

head, etc.).¹⁷ What basis is there for considering “integral part of an object” to be a basic conceptual organising principle for BH speakers? Is a *wing (of a cherub)* (כְּנָף כְּרוּב) really cognitively grouped with a *branch (of an almond tree)* (מִקֵּל שְׁקֵד), let alone with the *belly (of Sheol)* (בֶּטֶן שְׂאוֹל)? They are similar in one respect, and so a conceptual commonality can easily be evoked by labelling them as Parts; yet at a much more immediate level, כְּנָף is associated with flying Creatures (prototypically birds); מִקֵּל is associated with Vegetation, and then with various functions for which (detached) rods were used; and בֶּטֶן is associated with inner parts of a human body, especially the womb of a pregnant woman, and then metaphorically with either the inner or the bulging parts of other entities. That is, while Parts may be a perfectly reasonable *logical* category for various words in BH, there is little to suggest that it is the fundamentally relevant *cognitive* category in every case.

The same type of reasoning on the multiple-classification problem emerges in de Blois’s critique of Louw and Nida’s lexicon of New Testament Greek (de Blois and United Bible Societies 2000, §4.1; cf. Louw and Nida 1988). De Blois objects that Louw and Nida classified the word for “soldier” not in the People domain (where de Blois claims it belongs), but in the Military Activities domain. Similarly, “sinful,” “sin,” and “sinner,” though belonging to different semantic word-classes (Attribute, Event, and Object, respectively), were grouped together in the Moral and Ethical Qualities and Related Behavior domain. While de Blois concedes that the reasons for such classifications are “easy to see from a practical point of view,” he nevertheless maintains that “from a strictly linguistic point of view, this may not be the most ideal thing to do” (de Blois and United Bible Societies 2000, §4.1). This begs the question, Why is separating “soldier” from Military Activities, or “sin,” “sinful,” and “sinner” from one another, superior “from a strictly linguistic point of view”?

These criticisms are not to deny the usefulness of *SDBH*’s system of lexical semantic domains. Indeed, any lexicon will necessarily represent a simplification of the mental lexicon, including a simplification of systems of mental categorisation. Nevertheless, FrameNet has greater descriptive power at this point.

¹⁷ This definition comes from the HTML file that describes the lexical and contextual semantic domains in *SDBH*.

Returning to the *SDBH* entry for חקר, it is generally well-constructed, and utilises well the strengths and features of *SDBH*'s theoretical framework. The Verb, חקר, and מחקר are all grouped into a single entry. The first three subsenses, which cover the bulk of occurrences, correspond roughly with [EXPLORE]/[SEARCH], [EXAMINE PERSON], and [INVESTIGATE] in my system.

SDBH is in stark contrast to the lexica reviewed thus far, in that it lists eight subsenses of חקר. The organisation of the senses is occasionally questionable. For instance, Proverbs 23:30 is listed with physical “search/explore” senses of חקר in subsense (a), but it would be better in subsense (c), where most of the [INVESTIGATE] occurrences are listed. The reason for de Blois’s categorisation is his focus on whether the arguments of a relational term are, for example, Objects or Events. This is not always the most relevant criterion: in this case, מִמְסָךְ “mixed wine” is a physical object, but it is of a very different character from prototypical AREAS, which produces a figurative construal. Thus, I suggest that better definitions for subsenses (a) and (c) would be, respectively, “to gain information about a certain *physical area* by examining it carefully,” and “as (a), but extended to *other objects or events which can be construed as an area*.”

Subsenses (d) and (e) could both be relocated. Subsense (d) is exclusively for the expression לִבְ חִקֵּר in Judges 5:16,¹⁸ which is interpreted as “an effort to come to a decision concerning a particular matter.” However, the expression לִבְ חִקֵּר here has the same meaning as in Jeremiah 17:10 (subsense [b] in *SDBH*), except that the latter is an examination by God, whereas Judges 5:16 is a self-examination. Both nonetheless pertain to a mental exploration to discover a person’s disposition. Subsense (e) is for חקר דָּרֶךְ in Lamentations 3:40, and is rightly interpreted “to examine (one’s ways > behaviour)”; but this would be better placed in (c), or even with the personal extensions in (b).

The final three subsenses cover legitimate minority senses: respectively, the complex metonymic use of חִקֵּר in Job 8:8, a personal use of the “mystery” sense of חִקֵּר (Job 11:7), and the corresponding physical sense of מְחַקֵּר/חִקֵּר (Job 38:16; Ps 95:4).

¹⁸ An earlier version also included the proposed emendation in Judges 5:15, with the MT provided in a note. This appears to have been corrected.

4. *Summary*

For the most part, the lexica and theological dictionaries surveyed provide very little insight into the conceptual structure underlying חקר terms, compared with the frame-semantic approach of chapter 10. Apart from *SDBH*, ambiguous glosses prevailed over descriptions, and there was very little logical organisation or presentation of sense distinctions. The difference between figurative uses and the physical “exploring” image on which they are based had little effect on the sense breakdowns. Not surprisingly, our frame semantic approach also showed a great deal more about the *relational* structure of חקר terms—that is, the range of participants involved in events (not simply the ‘object’ of exploration), and the variations in their salience.

CHAPTER TWELVE

CONCLUSIONS

This study is, at every point, an *exploration*. It is an exploration of structural and dynamic cognitive approaches to lexical semantic analysis (chapters 2 and 3), and particularly of the cognitive frame-based approach pioneered by Charles Fillmore and implemented in the Berkeley FrameNet project, with its focus on correlating syntax with semantic structures (chapters 5 and 6). It is an exploration of constructional approaches to grammatical analysis, particularly William Croft's Radical Construction Grammar, and of the possibility of using RCG as the syntactic pole of Frame Semantics (chapters 4 and 7). It is an exploration of the possibility of applying all these methods to the lexical semantic analysis of BH, despite the ancient language problem, using a software package built for the task (chapter 8). And of course, it is an exploration of EXPLORATION—an exploration of a range of concepts related to “exploring,” which display motivated cross-linguistic patterns of variation and metaphoric extension, and of the חקר family of words, which typically expresses these concepts in BH (chapters 9 to 11).

This study is more than merely an exploration, however. It is also an *exhortation* to biblical scholars, particularly those involved in lexical semantic analysis, to consider the importance of the cognitive perspective on meaning, and to continue from where this study has left off, by further exploring the potential for frame-based analysis of BH. In particular, it is a commendation of *Radical* Frame Semantics—that is, a frame semantics with a radical approach to grammar, in which the primitive grammatical units are complex language-specific constructions, which we actually encounter in speech; and a frame semantics with a radical approach to semantics, in which the primitive semantic units are highly specific frames, built from our real-life experiences of the world.

This is not to say that frame semantics will be a panacea for BH lexicographers, and my aim has *not* been to demolish all other pretenders to the title of Universal Approach to Hebrew Lexical Semantics—for I do not believe there is such a thing. Each model has strengths and weaknesses, and Frame Semantics does not claim to

provide a comprehensive semantic analysis.¹ Particular words, or particular *kinds* of words, will be more suited to some models over others; but no model is ideally suited to all. For example, FrameNet is particularly well suited to the study of relational terms like חקר, and fills a very important gap with the systematic study of syntagmatic relationships in a text; but it is less productive with non-relational concepts. On the other hand, the cognitively-enhanced componential analysis model proposed by Gerrit van Steenbergen (2002a, 2002b, 2002c) holds a great deal of promise for studying conceptually rich terms which are not necessarily relational, and for articulating paradigmatic relationships in a semantic domain. The two approaches are complementary, of course.² The ideal tool, based on the ideal model, will undoubtedly marry a range of techniques in an innovative fashion; and the Semantic Dictionary of Biblical Hebrew has made a significant step in this direction.

I will conclude this study with a few thoughts about the benefits, whether realisable now or more distant possibilities, of Radical Frame Semantics to the lexical-semantic analysis of BH.³

1. *The benefits of Radical Frame Semantics*

At least since the early 1990s, the Frame Semantics studies of Fillmore and Beryl Atkins (Fillmore and Atkins 1992; Atkins 1995) placed a strong emphasis on syntagmatic relationships, stemming from their interest in frame elements (“semantic categories” in Fillmore and Atkins 1992) and semantic/syntactic valence. This developed into a model for systematic analysis of syntax and semantics, form and meaning, and their interrelationship—the subtle ways in which different senses are often signaled by different grammatical patterns (Atkins 1995, 32). This remains the great strength of their approach.

The result, FrameNet, itself is not first of all a dictionary (at least, not in the traditional sense), but a lexical resource which will benefit dictionary writers, language teachers, and researchers. In the case of

¹ Cf. Fillmore, Wooters, and Baker 2001.

² On the particular strengths of WordNet’s paradigmatic model for particular parts of the lexicon, see Fillmore 1978, §9; Schmidt 2009, 110, 28–29.

³ I will not here reiterate the specific conclusions about “exploring,” “searching,” and “seeking,” nor those pertaining to חקר and related terms, which were set out in chapters 9 and 10.

BH, a database like HebrewNet could be built as part of an electronic lexicon. Alternatively, it could be integrated into an analysed text of the HB, not as a full-scale lexicon, but as a resource for lexicon writers and for those interested in the systematic analysis of words in the HB.

As we saw with חקר, the FrameNet model yields a very fine-grained analysis of polysemy structure or sense differentiation—one which aids greatly in identifying and describing senses with precision. However, the interconnected nature of the senses (frames) means that fine-grained senses can be merged relatively easily, whereas far more work would be required to split broad senses into narrower ones (Atkins, Rundell, and Sato 2003, 337).

Frame Semantics is not just a tool to help in the *analysis* of words and their meanings, but it also has the potential to improve the *presentation* of meanings. Not only are LUs associated in common domains of meaning, but the domains are presented as *frames*; that is, a great deal of work goes into analysing and describing the conceptual structure of these domains—a conceptual structure that is shared and assumed by each LU in the domain. This presentation helps to avoid the danger of definition by ‘gloss,’ or simple (supposed) translation equivalent—a habit which persevered for too long in biblical lexica.⁴ As we saw from the review of חקר in the lexica (chapter 11), the result of glossing dictionary entries is imprecision and ambiguity.

The FrameNet presentation is particularly valuable in an interlingual dictionary, where the reader’s culture, beliefs, or experience will often differ considerably from that of the people whose language is being described. Where a word taps in to these differences, even an extended description of the word itself does not adequately ‘define’ it, or even convey a passable impression of its meaning and associations. These cases are often considered ‘untranslatable.’ Croft and Cruse cite as an example Geertz’s explanation of the Javanese *rasa*:

Rasa has two primary meanings: “feeling” and “meaning.” As “feeling” it is one of the traditional five senses (*pantjaindrija*)—seeing, hearing, talking, smelling, and feeling. It includes within itself three aspects of “feeling” that our view of the five senses separates: taste on the tongue, touch on the body, and emotional “feeling” within the “heart”—sadness, happiness, and the like. The taste of a banana is its *rasa*; a hunch is a *rasa*; a pain is a *rasa*; and so is a passion.

⁴ Cf. Barr 1992, 145; O’Connor 2002, 182; Lübke 2003.

As “meaning,” *rasa* is applied to the words in a letter, in a poem, or even in speech, to indicate the between-the-lines “looking north and hitting south” type of allusive suggestion that is so important in Javanese communication. And it is given the same application to external acts generally: to indicate the implicit import, the connotative “feeling” of dance movements, polite gestures, and so forth. But, in this second sense, it also means “ultimate significance”—the deepest meaning at which one arrives by dint of mystical effort and whose clarification resolves all the ambiguities of mundane existence. (Geertz 1976, 238)⁵

Croft analyses this explanation as follows: “In frame semantic terms, the concept RASA presupposes a frame consisting of much of Javanese culture” (Croft and Cruse 2004, 21).

The BH word group I analysed for this study is not particularly remote culturally from conceptually similar terms in, say, English. However, a study of a word group like **קדצ** would involve the kind of conceptual complexity seen with *rasa*.

My own method in this study has demonstrated three ways in which the FrameNet model can be extended or modified. First, while FrameNet focuses on syntagmatic relations, we can also build paradigmatic information into the same database; and syntagmatic and paradigmatic data can be used together to build networks of associated words. In general, paradigmatic relations help to identify the words which participate in the same or closely related frames, while syntagmatic relations help to discover the structure of these frames.

Second, FrameNet can readily be extended to include information about metaphors, as they are understood in cognitive linguistics—not only entrenched and conventional (frame-to-frame) metaphors, but also novel and creative (annotation-to-frame) figurative uses of words. In a larger-scale project, this may provide valuable data for understanding more about the recurrent and pervasive conceptual correlations underlying the language of the HB.

Third, FrameNet can be at least partially integrated with a constructional grammatical model such as RCG. In theory, the constructional side of the tool could be at least as complex as the semantic side—though this is a long way from realisation in FrameNet, let alone HebrewNet. This brings us to the as-yet untapped potential of Radical Frame Semantics for BH.

⁵ Croft and Cruse cite this passage from a different book, with minor differences in wording.

2. *The potential of Radical Frame Semantics*

Two future avenues for the application of Frame Semantics to BH were described in chapter 7 (§7); and to these, I will add one more.

The first was the possibility (or dream!) of a complete integration of construction grammar and frame semantics, which would allow grammatical and semantic analysis to be conducted side by side, to equal levels of sophistication. The second was perhaps more feasible: the addition of a layer of frame-semantic data, such as that provided by HebrewNet, onto one of the recently available syntactically analysed electronic texts of the MT, Andersen-Forbes or WIVU.

Finally, Thierry Fontenelle (2000) and Hans Boas (2001, 2005b) have proposed that Frame Semantics, and FrameNet in particular, is an ideal basis for the creation of bilingual and multilingual dictionaries (or multi-lingual lexical databases [MLLDs]). They suggest that semantic frames can function as the common—and implicitly, language-independent—element. The LUs of each language can then be connected to the frame network, along with the sample annotated sentences. This would then allow cross-linguistic comparison of, for example, the grammatical structures used to express the conceptual structure represented by the frame, and the patterns of FE salience evident in each language.⁶

This is an area in which much research is needed—and has already begun. The FrameNet daughter projects in Spanish (Subirats Rüggeberg and Petruck 2003), German (Erk, Kowalski, and Padó 2003), and Japanese (Ohara et al. 2004) each at least begin with frames taken from the English-language FrameNet, though they allow for the possibility of modifying them as necessary. The Chinese-language project BiFrameNet is much more ambitious: they are aiming to construct a bilingual FrameNet to enable machine translation and cross-lingual information retrieval.⁷

Whether such a project is feasible, I do not know. Whatever the case, the future looks very promising for frame-semantic research, and the world of BH semantic studies would benefit enormously from joining in the exploration.

⁶ See also Padó and Lapata 2005 on cross-lingual projects using English FrameNet as a base.

⁷ <http://www.cs.ust.hk/~hlhc/BiFrameNet/>.

LIST OF WORKS CITED

- Abbott, Barbara. 2003. Specificity and referentiality. Paper presented at the 15th European Summer School in Logic, Language and Information (ESSLI 15), workshop on direct reference and specificity, Vienna, Austria. <http://www.msu.edu/~abbottb/spec&ref.pdf>.
- . 2004. Definiteness and indefiniteness. In Horn and Ward 2004, 122–49.
- Aitken, James K. 2003. Lexical semantics and the cultural context of knowledge in Job 28, illustrated by the meaning of *hāqar*. In van Wolde 2003c, 119–37.
- Allen, Robert, ed. 2000. *The new Penguin English dictionary*. London: Penguin.
- Almog, Joseph. 1998a. The subject verb object class I. In *Language, mind, and ontology*, ed. J. E. Tomberlin, 39–76. Philosophical Perspectives 12. Malden, Mass.: Blackwell.
- . 1998b. The subject verb object class II. In *Language, mind, and ontology*, ed. J. E. Tomberlin, 77–104. Philosophical Perspectives 12. Malden, Mass.: Blackwell.
- Alonso Schökel, Luis. 1994. *Diccionario bíblico hebreo-español*. Madrid: Trotta.
- Alonso Schökel, Luis, and J. L. Sicre Díaz. 1983. *Job: Comentario teológico y literario*. Nueva Biblia Española. Madrid: Ediciones Cristiandad.
- Alter, Robert. 1985. *The art of biblical poetry*. New York: Basic Books.
- Andersen, Francis I. 1970. *The Hebrew verbless clause in the Pentateuch*. SBL Monograph Series 14. Nashville, Tenn.: Abingdon.
- . 1971. Passive and ergative in Hebrew. In *Near Eastern studies in honor of William Foxwell Albright*, ed. H. Goedicke, 1–15. Baltimore: John Hopkins.
- . 1995. Review of *The dictionary of classical Hebrew*, vol. 1, *Aleph*, by D. J. A. Clines. *Australian Biblical Review* 43:50–71.
- Andersen, Francis I., and A. Dean Forbes. 1989. *The vocabulary of the Old Testament*. Rome: Editrice Pontificio Istituto Biblico.
- . 2003. Hebrew grammar visualised: I. Syntax. *Ancient Near Eastern Studies* 40:43–61.
- . 2006. *A systematic glossary to the Andersen-Forbes analysis of the Hebrew Bible*. Lexham Bible Reference Series. Bellingham, Wash.: Logos Bible Software. DVD.
- Anstey, Matthew P. 2006a. The grammatical-lexical cline in tiberian Hebrew. *Journal of Semitic Studies* 51 (1):59–84.
- . 2006b. *Towards a Functional Discourse Grammar analysis of tiberian Hebrew*. Canberra, Australia: Matthew P. Anstey.
- . 2008. Functional Discourse Grammar — multifunctional problems and constructional solutions. *Linguistics* 46:831–59.
- . 2009. The Biblical Hebrew *qatal* verb: A functional discourse grammar analysis. *Linguistics* 47:825–44.
- Aronoff, Mark. 1987. Review of *Morphology: A study of the relation between meaning and form*, by J. L. Bybee. *Language* 63:115–29.
- Atkins, Beryl T. 1995. The role of the example in a frame semantics dictionary. In Shibatani and Thompson 1995, 25–42.

- Atkins, Sue, Charles J. Fillmore, and Christopher R. Johnson. 2003. Lexicographic relevance: Selecting information from corpus evidence. *International Journal of Lexicography* 16 (3):251–80.
- Atkins, Sue, Michael Rundell, and Hiroaki Sato. 2003. The contribution of FrameNet to practical lexicography. *International Journal of Lexicography* 16 (3):333–57.
- Baker, Collin F. 1999. Seeing clearly: Frame semantic, psycholinguistic, and cross-linguistic approaches to the semantics of the English verb *see*. PhD diss., Univ. of California, Berkeley. <http://www.icsi.berkeley.edu/~collinb/diss.html>.
- Baker, Collin F., Charles J. Fillmore, and Beau Cronin. 2003. The structure of the Framenet database. *International Journal of Lexicography* 16 (3):281–96.
- Baker, Mark C. 2003. *Lexical categories: Verbs, nouns and adjectives*. Cambridge Studies in Linguistics 102. Cambridge: Cambridge Univ. Press.
- Baldewein, Ulrike, Katrin Erk, Sebastian Padó, and Detlef Prescher. 2004. Semantic role labelling with similarity-based generalization using EM-based clustering. In *Proceedings of SENSEVAL-3: Third international workshop on the evaluation of systems for the semantic analysis of text*, ed. R. Mihalcea and P. Edmonds, 64–68. Barcelona, Spain: Association for Computational Linguistics. <http://www.aclweb.org/anthology/W04-0817>.
- Barcelona, Antonio, ed. 2000. *Metaphor and metonymy at the crossroads: A cognitive perspective*. Topics in English Linguistics 30. Berlin: Mouton de Gruyter.
- Barðdal, Jóhanna. 2001. Review of *Radical Construction Grammar*, by W. Croft. *Nordic Journal of Linguistics* 24 (1):671–82.
- Barker, Chris, and David Dowty. 1993. Non-verbal thematic proto-roles. In *Proceedings of the North East Linguistic Society* 23, ed. A. J. Schafer, vol. 1, 49–62. Amherst, Mass.: Graduate Linguistic Student Association.
- Barlow, Michael, and Suzanne Kemmer. 2000. *Usage-based models of language*. Stanford: CSLI Publications.
- Barr, James. 1961. *The semantics of biblical language*. London: Oxford Univ. Press.
- . 1962. *Biblical words for time*. Studies in Biblical Theology 33. London: SCM.
- . 1968. *Comparative philology and the text of the Old Testament*. Oxford.
- . 1969. The ancient semitic languages: The conflict between philology and linguistics. *Transactions of the Philological Society* 1968:37–55.
- . 1975. בִּאֲרֵךְ ~ ΜΟΛΙΣ: Prov. XI. 31, I Pet. IV. 18. *Journal of Semitic Studies* 20:149–64.
- . 1992. Hebrew lexicography: Informal thoughts. In *Linguistics and biblical Hebrew*, ed. W. R. Bodine, 137–51. Winona Lake, Ind.: Eisenbrauns.
- Barsalou, Lawrence W. 1992. Frames, concepts, and conceptual fields. In Lehrer and Kittay 1992, 21–74.
- Bergen, Benjamin K., and Nancy Chang. 2005. Embodied Construction Grammar in simulation-based language understanding. In Östman and Fried 2005a, 147–90.
- Bergen, Benjamin K., Nancy Chang, and Shweta Narayan. 2004. Simulated action in an Embodied Construction Grammar. In *Proceedings of the twenty-sixth annual meeting of the Cognitive Science Society*, ed. K. D. Forbus, D. Gentner and T. Regier, 108–13. Chicago: Cognitive Science Society. <http://www.cogsci.rpi.edu/CSJarchive/Proceedings/2004/CogSci04.pdf>.
- Berlin, Adele. 1985. *The dynamic of biblical parallelism*. Bloomington, Ind.: Indiana Univ. Press.

- Block, Daniel Isaac. 1997–1998. *The book of Ezekiel*. 2 vols. New International Commentary on the Old Testament. Grand Rapids: Eerdmans.
- Boas, Hans C. 2001. Frame semantics as a framework for describing polysemy and syntactic structures of English and German motion verbs in contrastive computational lexicography. In *Proceedings of the Corpus Linguistics 2001 Conference: Technical papers*, ed. P. Rayson, A. Wilson, T. McEnery, A. Hardie and S. Khoja, vol. 13, 64–73. Lancaster, UK: Univ. Centre for Computer Corpus Research on Language.
- . 2002. Bilingual FrameNet dictionaries for machine translation. In *Proceedings of the Third International Conference on Language Resources and Evaluation (LREC 2002)*, ed. M. González Rodríguez and C. Suárez Araujo, vol. 4, 1364–71. Las Palmas, Spain: ELRA.
- . 2003. *A constructional approach to resultatives*. Stanford Monographs in Linguistics. Stanford: Center for the Study of Language & Information.
- . 2005a. From theory to practice: Frame semantics and the design of FrameNet. In *Semantik im Lexikon*, ed. S. Langer and D. Schnorbusch, 129–60. Tübinger Beiträge zur Linguistik 479. Tübingen: Gunter Narr Verlag.
- . 2005b. Semantic frames as interlingual representations for multilingual lexical databases. *International Journal of Lexicography* 18 (4):445–78.
- Brandt, Line, and Per Aage Brandt. 2005. Making sense of a blend: A cognitive-semiotic approach to metaphor. *Annual Review of Cognitive Linguistics* 3:216–49.
- Bresnan, Joan W., ed. 1982. *The mental representation of grammatical relations*. Cambridge, Mass.: MIT Press.
- Brueggemann, Walter. 1991. *To build, to plant: A commentary on Jeremiah 26–52*. International Theological Commentary. Grand Rapids: Eerdmans.
- Bryce, Glendon E. 1972. Another wisdom-“book” in Proverbs. *Journal of Biblical Literature* 91:145–57.
- Burchardt, Aljoscha, Katrin Erk, Anette Frank, Andrea Kowalski, and Sebastian Padó. 2006a. SALTO: A Versatile Multi-Level Annotation Tool. In *Proceedings of the fifth international conference on Language Resources and Evaluation (LREC 2006)*, Genoa. <http://www.coli.uni-saarland.de/projects/salsa/papers/lrec06-tool.pdf>.
- Burchardt, Aljoscha, Katrin Erk, Anette Frank, Andrea Kowalski, Sebastian Padó, and Manfred Pinkal. 2006b. The SALSA Corpus: a German corpus resource for lexical semantics. In *Proceedings of the fifth international conference on Language Resources and Evaluation (LREC 2006)*, Genoa. http://comp.ling.utexas.edu/erk/papers/Corpus_Salsa06.pdf.
- Bybee, Joan L. 1985. *Morphology: A study into the relation between meaning and form*. Amsterdam: J. Benjamins.
- Carroll, Robert P. 1986. *Jeremiah: A commentary*. Old Testament Library. London: SCM.
- Chang, Nancy. 2004. A computational model of comprehension-based construction acquisition. In *Proceedings of the 2004 Child Language Research Forum: Constructions and acquisition*, ed. E. V. Clark, 40–49. Stanford: CSLI Publications. <http://csli-publications.stanford.edu/CLRF/2004/07-Chang.pdf>.
- Chang, Nancy, Jerome Feldman, Robert Porzel, and Keith Sanders. 2002. Scaling cognitive linguistics: Formalisms for language understanding. In *Proceedings of the first international workshop on scalable natural language understanding*, ed. R.

- Malaka, R. Porzel and M. Strube. Heidelberg. <http://www.icsi.berkeley.edu/NTL/papers/scaling.pdf>.
- Chang, Nancy, and Olya Gurevich. 2004. Context-driven construction learning. In *Proceedings of the twenty-sixth annual meeting of the Cognitive Science Society*, ed. K. D. Forbus, D. Gentner and T. Reiger, 204–9. Chicago: Cognitive Science Society. <http://www.cogsci.rpi.edu/CSJarchive/Proceedings/2004/CogSci04.pdf>.
- Chang, Nancy, Srinu Narayanan, and Miriam R. L. Petruck. 2002. Putting frames in perspective. In *COLING 2002: Proceedings of the 19th International Conference on Computational Linguistics, Taipei, Taiwan*, ed. S.-C. Tseng, T.-E. Chen and Y.-F. Liu, vol. 1, 148–54. San Francisco: Morgan Kaufmann. <http://www.aclweb.org/anthology/C02-1156>.
- Cienki, Alan. 2005. Metaphor in the “strict father” and “nurturant parent” cognitive models: Theoretical issues raised in an empirical study. *Cognitive Linguistics* 16 (2):279–312.
- Clark, Herbert H. 1996. *Using language*. Cambridge: Cambridge Univ. Press.
- Clausner, Timothy C., and William Croft. 1997. The productivity and schematicity of metaphor. *Cognitive Science* 21:247–82.
- . 1999. Domains and image schemas. *Cognitive Linguistics* 10 (1):1–31.
- Clines, David J. A. 1989. *Job 1–20*. Word Biblical Commentary 17. Dallas, Tex.: Word.
- Comrie, Bernard. 1976. *Aspect: An introduction to the study of verbal aspect and related problems*. Cambridge: Cambridge Univ. Press.
- Comrie, Bernard, Martin Haspelmath, and Bickel Balthasar. 2008. *The Leipzig glossing rules: Conventions for interlinear morpheme-by-morpheme glosses*. <http://www.eva.mpg.de/lingua/resources/glossing-rules.php> (accessed October 17, 2008).
- Cook, Kenneth William. 1996. The temporal use of Hawaiian directional particles. In *The construal of space in language and thought*, ed. M. Pütz and R. Dirven, 455–66. Cognitive Linguistics Research 8. Berlin: Mouton de Gruyter.
- Coulson, Seanna. 2001. *Semantic leaps: Frame-shifting and conceptual blending in meaning construction*. Cambridge: Cambridge Univ. Press.
- Cremer, H. 1915. *Biblisch-theologisches Wörterbuch der neutestamentlichen Gräcität*. 10th ed.
- Crenshaw, James L. 1998. *Old Testament wisdom: An introduction*. Rev. ed. Louisville, Ky.: Westminster John Knox.
- Croft, William. 1991. *Syntactic categories and grammatical relations: The cognitive organization of information*. Chicago: Univ. of Chicago Press.
- . 1998. Event structure in argument linking. In *The projection of arguments: Lexical and compositional factors*, ed. M. Butt and W. Geuder, 1–43. Stanford: Center for the Study of Language & Information.
- . 1999a. Parts of speech as typological universals and as language particular categories. In *Approaches to the typology of word classes*, ed. P. M. Vogel and B. Comrie, 65–102. Empirical Approaches to Language Typology 23. Berlin: Mouton de Gruyter.
- . 1999b. Some contributions of typology to cognitive linguistics, and vice versa. In *Cognitive linguistics: Foundations, scope and methodology*, ed. T. Janssen and G. Redeker, 61–93. Cognitive Linguistics Research 15. Berlin: Mouton de Gruyter.

- . 2001. *Radical Construction Grammar: Syntactic theory in typological perspective*. Oxford: Oxford Univ. Press.
- . 2003. *Typology and universals*. 2nd ed. Cambridge Textbooks in Linguistics. Cambridge: Cambridge Univ. Press.
- . 2005. Logical and typological arguments for Radical Construction Grammar. In Östman and Fried 2005a, 273–314.
- Croft, William, and D. Alan Cruse. 2004. *Cognitive linguistics*. Cambridge Textbooks in Linguistics. Cambridge: Cambridge Univ. Press.
- Cruse, D. Alan. 1986. *Lexical semantics*. Cambridge Textbooks in Linguistics. Cambridge: Cambridge Univ. Press.
- . 2000. Aspects of the micro-structure of word meanings. In *Polysemy: Theoretical and computational approaches*, ed. Y. Ravin and C. Leacock, 30–51. Oxford: Oxford Univ. Press.
- . 2004. *Meaning in language: An introduction to semantics and pragmatics*. 2nd ed. Oxford Textbooks in Linguistics. Oxford: Oxford Univ. Press.
- Crystal, David. 1997. *The Cambridge encyclopedia of language*. 2nd ed. New York: Cambridge Univ. Press.
- . 2003. *A dictionary of linguistics and phonetics*. 5th ed. Language Library. Oxford: Blackwell.
- Cuyckens, Hubert, René Dirven, and John R. Taylor, eds. 2003. *Cognitive approaches to lexical semantics*. Cognitive Linguistics Research 23. Berlin: Mouton de Gruyter.
- Dahood, Mitchell. 1965. Hebrew-Ugaritic lexicography III. *Biblica* 46:311–32.
- . 1968. *Psalms II: 51–100, introduction, translation, and notes*. Anchor Bible 17. Garden City, N.Y.: Doubleday.
- Dancygier, Barbara, and Eve Sweetser. 2005. *Mental spaces in grammar: Conditional constructions*. Cambridge Studies in Linguistics 108. Cambridge: Cambridge Univ. Press.
- Danesi, Marcel. 1997. From the *fantasia* through *metaphor* to *knowledge*: A Vichian perspective of conceptualization. In *Semiotics around the world: Synthesis in diversity; Proceedings of the fifth congress of the International Association for Semiotic Studies, Berkeley, 1994*, ed. I. Rauch and G. F. Carr, vol. 1, 17–44. Approaches to Semiotics 126. Berlin: Mouton de Gruyter.
- Darby, Andrew, and Gary Tippet. 2006. Miners walk free after 320 hours in hell. *Sydney Morning Herald*, May 10. <http://www.smh.com.au/news/national/miners-walk-free-after-320-hours-in-hell/2006/05/09/1146940552253.html>.
- De Beule, Joachim, and Luc Steels. 2005. Hierarchy in Fluid Construction Grammars. In *KI 2005: Advances in Artificial Intelligence; 28th Annual German Conference on AI*, ed. U. Furbach, 1–15. Lecture Notes in Computer Science 3698. Berlin: Springer.
- de Blois, Reinier. 2000. Semantic domains for biblical Hebrew. In *Bible and computer: The Stellenbosch AIBI-6 Conference; Proceedings of the Association Internationale Bible et Informatique "From Alpha to Byte" University of Stellenbosch 17–21 July, 2000*, ed. J. Cook, 209–29. Leiden: Brill.
- . 2002. Lexicography and cognitive linguistics: Hebrew metaphors from a cognitive perspective. Paper presented at the SBL annual meeting, Toronto. http://www.ubs-translations.org/sdbh/framework/Paper_SBL_2002.pdf.

- . 2005. Semantic domains for biblical Greek: Louw and Nida's framework evaluated from a cognitive perspective. Paper presented at the SBL annual meeting, Philadelphia.
- de Blois, Reinier, and United Bible Societies. 2000. *Towards a new dictionary of biblical Hebrew based on semantic domains*. New York: United Bible Societies.
- Dhorme, E. 1967. *A commentary on the book of Job*. Trans. H. Knight. London: Thomas Nelson.
- Diessel, Holger, and Michael Tomasello. 2001. The acquisition of finite complement clauses in English: A corpus-based analysis. *Cognitive Linguistics* 12:97–141.
- Dirven, René, and Günter Radden. 2004. The cognitive basis of language: Language and thought. In *Cognitive exploration of language and linguistics*, ed. R. Dirven and M. Verspoor, 2nd ed., 1–23. *Cognitive Linguistics in Practice* 1. Amsterdam: John Benjamins.
- Donald, T. 1963. The semantic field of “folly” in Proverbs, Job, Psalms and Ecclesiastes. *Vetus Testamentum* 13:285–92.
- Dowty, David. 1991. Thematic proto-roles and argument selection. *Language* 67:547–619.
- Driver, G. R. 1936. Textual and linguistic problems of the book of Psalms. *Harvard Theological Review* 29:171–95.
- . 1943. Notes on the Psalms. II. 73–150. *Journal of Theological Studies* 44:12–23.
- Driver, S. R. 1908. *The book of Job in the Revised Version*. Oxford: Clarendon Press.
- Driver, S. R., and G. B. Gray. 1921. *A critical and exegetical commentary on the book of Job*. International Critical Commentary. Edinburgh: T&T Clark.
- Dryer, Matthew. 1986. Primary objects, secondary objects and antidative. *Language* 62:808–45.
- Eco, Umberto. 1976. *A theory of semiotics*. Bloomington, Ind.: Indiana Univ. Press.
- . 1984. *Semiotics and the philosophy of language*. Basingstoke: Macmillan.
- . 2001. *Experiences in translation*. Trans. A. McEwen. Toronto Italian Studies. Toronto: Univ. of Toronto Press.
- . 2003. *Mouse or rat? Translation as negotiation*. London: Weidenfeld & Nicolson.
- Eisemann, Moshe. 1994. *Job [Iyob]: A new translation with a commentary anthologized from talmudic, midrashic, and rabbinic sources*. ArtScroll Tanach Series. Brooklyn: Mesorah.
- Elwolde, John F. 2003. Non-contiguous parallelism as a key to literary structure and lexical meaning in Job 28. In van Wolde 2003c, 103–18.
- Emerton, John Adney. 1964. A note on Proverbs 12:26. *Zeitschrift für die alttestamentliche Wissenschaft* 76:191–93.
- . 1969. Notes on some passages in the book of Proverbs. *Journal of Theological Studies* 20:202–20.
- . 1997. Comparative Semitic philology and Hebrew lexicography. In *Congress volume: Cambridge 1995*, ed. J. A. Emerton, 1–24. Supplements to *Vetus Testamentum* 66. Leiden: E. J. Brill.
- Erickson, Richard John. 1980. Biblical semantics, semantic structure, and biblical lexicology: A study of methods, with special reference to the Pauline lexical fields of “cognition”. PhD diss., Fuller Theological Seminary.

- Erk, Katrin, Andrea Kowalski, and Sebastian Padó. 2003. The SALSA annotation tool. In *Proceedings of the workshop on prospects and advances in the syntax/semantics interface*, ed. D. Duchier and G.-J. M. Kruijff, 1–4. Nancy, France. <http://comp.ling.utexas.edu/erk/papers/lorrainesaarland.ps>.
- Erk, Katrin, Andrea Kowalski, Sebastian Padó, and Manfred Pinkal. 2003. Towards a resource for lexical semantics: A large German corpus with extensive semantic annotation. In *Proceedings of the 41st annual meeting of the Association for Computational Linguistics*, 537–44. Sapporo, Japan: Association for Computational Linguistics. <http://www.aclweb.org/anthology/P03-1068>.
- Erk, Katrin, and Sebastian Padó. 2004. A powerful and versatile XML Format for representing role-semantic annotation. In *Proceedings of the 4th International Conference on Language Resources and Evaluation (LREC 2004)*, ed. M. T. Lino, M. F. Xavier, F. Ferreira, R. Costa and R. Silva, 799–802. Lisbon: ELRA. <http://comp.ling.utexas.edu/erk/papers/stxml.pdf>.
- Evans, Vyvyan, and Melanie C. Green. 2006. *Cognitive linguistics: An introduction*. Edinburgh: Edinburgh Univ. Press.
- Faber, Pamela B., and Ricardo Mairal Usón. 1999. *Constructing a lexicon of English verbs*. Functional Grammar Series 23. Berlin: Mouton de Gruyter.
- Falk, Yehuda N. 2004. The Hebrew present-tense copula as a mixed category. In *The proceedings of the LFG 04 Conference*, ed. M. Butt and T. H. King, 226–46. Univ. of Canterbury: CSLI Publications. <http://csli-publications.stanford.edu/LFG/9/lfg04falk.pdf>.
- Fauconnier, Gilles. 1985. *Mental spaces: Aspects of meaning construction in natural language*. Cambridge, Mass.: MIT Press.
- . 1997. *Mappings in thought and language*. Cambridge, Mass.: Cambridge Univ. Press.
- . 2004a. Mental spaces, language modalities, and conceptual integration. In *Semantics: A reader*, ed. S. Davis and B. S. Gillon, 346–65. Oxford: Oxford Univ. Press.
- . 2004b. Pragmatics and cognitive linguistics. In Horn and Ward 2004, 657–74.
- Fauconnier, Gilles, and Mark Turner. 1998. Conceptual integration networks. *Cognitive Science* 22:133–88.
- . 2002. *The way we think: Conceptual blending and the mind's hidden complexities*. New York: Basic Books.
- . 2008. Rethinking metaphor. In *The Cambridge handbook of metaphor and thought*, ed. R. W. Gibbs, Jr. Cambridge: Cambridge Univ. Press.
- Fellbaum, Christiane, ed. 1998. *WordNet: An electronic lexical database*. Language, Speech, and Communication. Cambridge, Mass.: MIT Press.
- Feyaerts, Kurt, ed. 2003. *The Bible through metaphor and translation: A cognitive semantic perspective*. Religions and Discourse 15. Oxford: Peter Lang.
- Filip, Hana. 1999. *Aspect, eventuality types and nominal reference*. Outstanding Dissertations in Linguistics. New York: Garland.
- Fillmore, Charles J. 1968. The case for case. In *Universals in linguistic theory*, ed. E. W. Bach and R. T. Harms, 1–88. New York: Holt, Rinehart & Winston.
- . 1976. Frame semantics and the nature of language. In *Origins and evolution of language and speech*, ed. S. R. Harnad, H. D. Steklis and J. Lancaster, 20–32.

- Annals of the New York Academy of Sciences 280. New York: New York Academy of Sciences.
- . 1978. On the organization of semantic information in the lexicon. In *Papers from the parasession on the lexicon*, ed. D. Farkas, W. M. Jacobsen and K. W. Todrys, 148–73. Chicago: Chicago Linguistics Society.
- . 1982. Frame semantics. In *Linguistics in the morning calm*, ed. Linguistics Society of Korea, 111–37. Seoul, Korea: Hanshin.
- . 1985. Semantic fields and semantic frames. *Quaderni di Semantica* 6 (2):222–54.
- . 1986. Pragmatically-controlled zero anaphora. In *Proceedings of the twelfth annual meeting of the Berkeley Linguistics Society*, ed. V. Nikiforidou, M. VanClay, M. Niepkuj and D. Feder, 95–107. Berkeley, Calif.: Berkeley Linguistics Society.
- . 2003. *Form and meaning in language*. Vol. 1. CSLI Lecture Notes 121. Stanford: Center for the Study of Language & Information.
- . 2006. Articulating lexicon and construction. Paper presented at the Fourth International Conference on Construction Grammar (ICCG4), Univ. of Tokyo.
- Fillmore, Charles J., and Beryl T. Atkins. 1992. Toward a frame-based lexicon: The semantics of RISK and its neighbors. In Lehrer and Kittay 1992, 75–102.
- . 1994. Starting where the dictionary stops: The challenge for computational lexicography. In *Computational approaches to the lexicon*, ed. B. T. Atkins and A. Zampolli, 349–93. New York: Oxford Univ. Press.
- Fillmore, Charles J., and Collin F. Baker. 2010. A Frame Approach to Semantic Analysis. In *The Oxford Handbook of Linguistic Analysis*, ed. B. Heine and H. Narrog, 313–39. Oxford Handbooks in Linguistics. Oxford: Oxford Univ. Press.
- Fillmore, Charles J., Christopher R. Johnson, and Miriam R. L. Petruck. 2003. Background to Framenet. *International Journal of Lexicography* 16 (3):235–50.
- Fillmore, Charles J., and Paul Kay. 1993. *Construction Grammar coursebook, chapters 1 thru 11 (reading materials for Ling. X20)*. Univ. of California, Berkeley.
- Fillmore, Charles J., Paul Kay, and M. C. O'Connor. 1988. Regularity and idiomaticity in grammatical constructions: The case of *let alone*. *Language* 64:501–38.
- Fillmore, Charles J., Miriam R. L. Petruck, Josef Ruppenhofer, and Abby Wright. 2003. Framenet in action: The case of attaching. *International Journal of Lexicography* 16 (3):297–332.
- Fillmore, Charles J., Charles Wooters, and Collin F. Baker. 2001. Building a large lexical databank which provides deep semantics. In *Proceedings of the 15th Pacific Asia Conference on Language, Information and Computation (PACLIC)*, ed. B. Tsou and O. Kwong. Hong Kong: City Univ. of Hong Kong. <http://framenet.icsi.berkeley.edu/~framenet/papers/dsemlex16.pdf>.
- Floor, Sebastiaan Jonathan. 2004. From information structure, topic and focus, to theme in biblical Hebrew narrative. DLitt diss., Univ. of Stellenbosch.
- Fontenelle, Thierry. 2000. A bilingual lexical database for frame semantics. *International Journal of Lexicography* 13 (4):232–48.
- Forbes, Graeme. 2004. Intensional transitive verbs. In *The Stanford encyclopedia of philosophy (winter 2004 edition)*, ed. E. N. Zalta. <http://plato.stanford.edu/archives/win2004/entries/intensional-trans-verbs/>.
- Fortescue, Michael. 2001. Thoughts about thought. *Cognitive Linguistics* 12:15–45.
- Francez, Itamar. 2006. Semantic structure and argument realization in (mostly Hebrew) existentials. In *Proceedings of Israel Association for Theoretical Linguistics*

- 22, ed. Y. N. Falk. Hebrew Univ. of Jerusalem: IATL. <http://linguistics.huji.ac.il/IATL/22/Francez.pdf>.
- Frank, Anette, and Katrin Erk. 2004. Towards an LFG syntax-semantics interface for frame semantics annotation. In *Computational Linguistics and Intelligent Text Processing: 5th International Conference, CICLing 2004*, ed. A. Gelbukh, 1–13. Lecture Notes in Computer Science 2945. New York: Springer.
- Garey, Howard B. 1957. Verbal aspect in French. *Language* 33:91–110.
- Geertz, Clifford. 1976. *The religion of Java*. Chicago: Univ. of Chicago Press.
- Gertner, M. 1962. Terms of scriptural interpretation: A study in Hebrew semantics. *Bulletin of the School of Oriental and African Studies, University of London* 25:1–27.
- Gibson, Arthur. 1981. *Biblical semantic logic: A preliminary analysis*. Oxford: Basil Blackwell.
- Gildea, Daniel, and Daniel Jurafsky. 2002. Automatic labelling of semantic roles. *Computational Linguistics* 28 (3):245–88.
- Goldberg, Adele E. 1995. *Constructions: A Construction Grammar approach to argument structure*. Chicago: Univ. of Chicago Press.
- . 2003a. Constructions: A new theoretical approach to language. *Trends in Cognitive Science* 7 (5):219–24.
- . 2003b. Words by default: The Persian complex predicate construction. In *Mismatch: Form-function incongruity and the architecture of grammar*, ed. E. J. Francis and L. A. Michaelis, 117–46. CSLI Lecture Notes 163. Stanford: CSLI Publications.
- Goldberg, Adele E., Devin M. Casenhiser, and Nitya Sethuraman. 2004. Learning argument structure generalizations. *Cognitive Linguistics* 15 (3):289–316.
- Gordis, Robert. 1978. *The book of Job: Commentary, new translation, and special studies*. Moreshet 2. New York: Jewish Theological Seminary of America.
- Grady, Joseph E., Todd Oakley, and Seanna Coulson. 1999. Blending and metaphor. In *Metaphor in cognitive linguistics: Selected papers from the 5th International Cognitive Linguistics Conference, Amsterdam, 1997*, ed. R. W. Gibbs, Jr. and G. J. Steen, 101–24. Amsterdam Studies in the Theory and History of Linguistic Science, 4th ser., Current Issues in Linguistic Theory 175. Amsterdam: J. Benjamins.
- Grandy, Richard E. 1992. Semantic fields, prototypes, and the lexicon. In Lehrer and Kittay 1992, 103–22.
- Greenberg, Joseph H. 1963. Some universals of grammar with particular reference to the order of meaningful elements. In *Universals in Language*, ed. J. H. Greenberg, 58–90. Cambridge, Mass.: MIT Press.
- Habel, Norman. 1985. *The book of Job: A commentary*. Old Testament Library. London: SCM.
- . 2003. The implications of God discovering wisdom in earth. In van Wolde 2003c, 281–97.
- Halliday, M. A. K., and Edward McDonald. 2004. Metafunctional profile of the grammar of Chinese. In *Language typology: A functional perspective*, ed. A. Caffarel, J. R. Martin and C. M. I. M. Matthiessen, 305–96. Amsterdam Studies in the Theory and History of Linguistic Science, 4th ser., Current Issues in Linguistic Theory 253. Amsterdam: J. Benjamins.
- Hanks, Patrick. 2004. The syntagmatics of metaphor and idiom. *International Journal of Lexicography* 17 (3):245–74.

- Harder, Peter. 1996. *Functional semantics: A theory of meaning, structure and tense in English*. Trends in Linguistics: Studies and Monographs 87. Berlin: Mouton de Gruyter.
- Hardmeier, Christof, Eep Talstra, and Alan Groves. 2004. *Stuttgart Electronic Study Bible*. Stuttgart: Deutsche Bibelgesellschaft. CD-ROM.
- Harris, Scott L. 1983. Wisdom or creation? A new interpretation of Job xxviii 27. *Vetus Testamentum* 33:419–27.
- Harris, Zellig S. 1951. *Methods in structural linguistics*. Chicago: Univ. of Chicago Press.
- Hartley, John E. 1988. *The book of Job*. New International Commentary on the Old Testament. Grand Rapids: Eerdmans.
- Hjelmslev, Louis. 1969. *Prolegomena to a theory of language*. Trans. F. J. Whitfield. Rev. English ed. Madison: Univ. of Wisconsin Press.
- Hoftijzer, J. 1965. Remarks concerning the use of the particle 't in classical Hebrew. *Oudtestamentische Studiën* 14:1–99.
- Holladay, William L. 1989. *Jeremiah 2*. Hermeneia. Minneapolis: Fortress.
- . 2000. *A concise Hebrew and Aramaic lexicon of the Old Testament*. Leiden: E. J. Brill. CD-ROM.
- Horn, Laurence R., and Gregory Ward, eds. 2004. *The handbook of pragmatics*. Blackwell Handbooks in Linguistics 16. Malden, Mass.: Blackwell.
- Huddleston, Rodney. 1988. *English grammar: An outline*. Cambridge: Cambridge Univ. Press.
- Hurford, James R. 1992. Meaning: Properties and relationships. In *International encyclopedia of linguistics*, ed. W. Bright, vol. 2, 406–8. Oxford: Oxford Univ. Press.
- Ibarretxe-Antuñano, Iraide. 2002. MIND-AS-BODY as a cross-linguistic conceptual metaphor. *Miscelánea: A journal of English and American studies* 25:93–119.
- Jackendoff, Ray. 1990. *Semantic structures*. Current Studies in Linguistics 18. Cambridge, Mass.: MIT Press.
- . 2004. What is a concept, that a person may grasp it? In *Semantics: A reader*, ed. S. Davis and B. S. Gillon, 322–45. Oxford: Oxford Univ. Press.
- Katz, Jerrold J., and Jerry A. Fodor. 1963. The structure of a semantic theory. *Language* 39:170–210.
- Kaufman, Stephen A., and Joseph A. Fitzmyer. Forthcoming. *The comprehensive Aramaic lexicon*. Baltimore: Johns Hopkins Univ. Press. <http://cal1.cn.huc.edu/>.
- Kay, Paul. 1997. *Words and the grammar of context*. CSLI Lecture Notes 40. Stanford: Center for the Study of Language & Information.
- . 2002. An informal sketch of a formal architecture for Construction Grammar. *Grammars* 5:1–19.
- Kay, Paul, and Charles J. Fillmore. 1999. Grammatical constructions and linguistic generalizations: The *What's X doing Y?* construction. *Language* 75:1–33.
- Key Terms in Biblical Hebrew. 2007. *KTBH: A guide for researchers*. <http://www.ktbh-team.org/> (accessed 29 September 2009).
- Kittay, Eva Feder, and Adrienne Lehrer. 1992. Introduction. In Lehrer and Kittay 1992, 1–18.
- Kolehmainen, Leena, and Meri Larjavaara. 2004. The “bizarre” valency behaviour of Finnish verbs: How a specific context gives rise to valency alternation patterns. *Constructions* 1/2004. urn:nbn:de:0009-4-310. <http://www.constructions-online.de/articles/31>.

- Kövecses, Zoltán. 2002. *Metaphor: A practical introduction*. New York: Oxford Univ. Press.
- Kroeze, Jan H. 2004. Towards a multidimensional linguistic database of biblical Hebrew. *Journal of Northwest Semitic Languages* 30 (2):99–120.
- Kugel, James L. 1981. *The idea of biblical poetry: Parallelism and its history*. New Haven: Yale Univ. Press.
- Lakoff, George. 1987. Women, fire and dangerous things: What categories reveal about the mind. Chicago: Univ. of Chicago Press.
- . 1990. The invariance hypothesis: Is abstract reason based on image-schemas? *Cognitive Linguistics* 1:39–74.
- Lakoff, George, and Mark Johnson. 1980. *Metaphors we live by*. Chicago: Univ. of Chicago Press, 2003 (with Afterword).
- Lakoff, George, and Mark Turner. 1989. *More than cool reason: A field guide to poetic metaphor*. Chicago: Univ. of Chicago Press.
- Lambrecht, Knud. 1994. *Information structure and sentence form: Topic, focus, and the mental representations of discourse referents*. Cambridge Studies in Linguistics 71. Cambridge: Cambridge Univ. Press.
- . 1995. The pragmatics of case: On the relationship between semantic, grammatical, and pragmatic roles in English and French. In Shibatani and Thompson 1995, 145–90.
- Langacker, Ronald W. 1982. Space grammar, analysability, and the English passive. *Language* 58:22–80.
- . 1987a. *Foundations of Cognitive Grammar*. Vol. 1, *Theoretical prerequisites*. Stanford: Stanford Univ. Press.
- . 1987b. Nouns and verbs. *Language* 63:53–94.
- . 1988. A usage-based model. In *Topics in cognitive linguistics*, ed. B. Rudzka-Ostyn, 127–61. Amsterdam: J. Benjamins.
- . 1990. *Concept, image, and symbol: The cognitive basis of grammar*. Cognitive Linguistics Research 1. Berlin: Mouton de Gruyter.
- . 1991. *Foundations of Cognitive Grammar*. Vol. 2, *Descriptive application*. Stanford: Stanford Univ. Press.
- . 2000a. A dynamic usage-based model. In Barlow and Kemmer, 1–63.
- . 2000b. *Grammar and conceptualization*. Cognitive Linguistics Research 14. Berlin: Mouton de Gruyter.
- . 2001. Discourse in Cognitive Grammar. *Cognitive Linguistics* 12 (2):143–88.
- . 2003. Context, cognition, and semantics: A unified dynamic approach. In van Wolde 2003c, 179–230.
- . 2005. Construction grammars: Cognitive, radical, and less so. In *Cognitive linguistics: Internal dynamics and interdisciplinary interaction*, ed. F. J. Ruiz de Mendoza Ibáñez and M. S. Peña Cervel, 101–59. Cognitive Linguistics Research 32. Berlin: Mouton de Gruyter.
- Lee, John A. L. 2003. *A history of New Testament lexicography*. Studies in Biblical Greek 8. New York: Peter Lang.
- Lehrer, Adrienne. 1974. *Semantic fields and lexical structure*. North-Holland Linguistic Series 11. Amsterdam: North-Holland.
- Lehrer, Adrienne, and Eva Feder Kittay, eds. 1992. *Frames, fields, and contrasts: New essays in semantic and lexical organization*. Hillsdale, N.J.: Lawrence Erlbaum Associates.

- Levin, Beth C. 1993. *English verb classes and alternations: A preliminary investigation*. Chicago: Univ. of Chicago Press.
- Loader, James Alfred. 2003. Job and cognition in context: Impressions and prospects from the perspective of exegesis. In van Wolde 2003c, 321–29.
- Löbner, Sebastian. 2002. *Understanding semantics*. Understanding Language Series. London: E. Arnold.
- Loewenstamm, Samuel E. 1987. Remarks on Proverbs XVII 12 and XX 27. *Vetus Testamentum* 37:221–24.
- Longacre, Robert E. 1956. Review of *Language and reality*, by Wilbur M. Urban, and *Four articles on metalinguistics*, by Benjamin Lee Whorf. *Language* 32:298–308.
- . 1989. *Joseph: A story of divine providence: A text theoretical and textlinguistic analysis of Genesis 37 and 39–48*. Winona Lake, Ind.: Eisenbrauns.
- . 1996. *The grammar of discourse*. 2nd ed. Topics in Language and Linguistics. New York: Plenum.
- Longacre, Robert E., and S. J. J. Hwang. 1994. A textlinguistic approach to the biblical Hebrew narrative of Jonah. In *Biblical Hebrew and discourse linguistics*, ed. R. D. Bergen, 336–58. Dallas, Tex.: Summer Institute of Linguistics.
- Louw, Johannes P. 1985. A semantic domain approach to lexicography. In *Lexicography and translation: With special reference to bible translation*, ed. J. P. Louw, 157–97. Cape Town: Bible Society of South Africa.
- . 1991. How do words mean—if they do? *Filologia Neotestamentaria* 4:125–42.
- Louw, Johannes P., and Eugene Albert Nida, eds. 1988. *Greek-English lexicon of the New Testament based on semantic domains*. 2nd ed. New York: United Bible Societies.
- Lowery, Kirk E. 1995. The role of semantics in the adequacy of syntactic models of biblical Hebrew. In *Proceedings of the Fourth International Colloquium Bible and Computer: Desk and discipline; The impact of computers in Bible studies*, Amsterdam, 15–18 August 1994, 101–28. Travaux de linguistique quantitative 57. Paris: Éditions Honoré Champion.
- Lübbe, J. C. 2003. Semantic domains, associative fields, and Hebrew lexicography. *Journal for Semitics (Tydskrif vir Semitistiek)* 12 (1):128–42.
- Lundbom, Jack R. 2004. *Jeremiah 37–52: A new translation with introduction and commentary*. Anchor Bible 21C. New York: Doubleday.
- Lust, J., E. Eynikel, and K. Hauspie. 1992. *A Greek-English lexicon of the Septuagint*. Rev. ed. Stuttgart: Deutsche Bibelgesellschaft, 2003. CD-ROM.
- Lyons, John. 1977. *Semantics*. 2 vols. Cambridge: Cambridge Univ. Press.
- . 1995. *Linguistic semantics: An introduction*. Cambridge: Cambridge Univ. Press.
- Matthews, Peter H. 1981. *Syntax*. Cambridge: Cambridge Univ. Press.
- . 1997. *The concise Oxford dictionary of linguistics*. Oxford: Oxford Univ. Press. http://www.oxfordreference.com/views/BOOK_SEARCH.html?book=t36.
- . 2001. *A short history of structural linguistics*. Cambridge: Cambridge Univ. Press.
- Matties, Gordon H., and R. D. Patterson. 1997. חֶקֶר. In *New international dictionary of Old Testament theology and exegesis*, ed. W. A. VanGemeren, vol. 2, 252–55. Grand Rapids: Zondervan.
- McKane, William. 1996. *A critical and exegetical commentary on Jeremiah*. Vol. 2. International Critical Commentary. Edinburgh: T&T Clark.

- Michaelis, Laura A. 2003. Word meaning, sentence meaning and syntactic meaning. In Cuyckens, Dirven, and Taylor 2003, 163–210.
- . 2004. Type shifting in Construction Grammar: An integrated approach to aspectual coercion. *Cognitive Linguistics* 15 (1):1–67.
- Michaelis, Laura A., and Josef Ruppenhofer. 2004. Valence creation and the German applicative: The inherent semantics of linking patterns. *Journal of Semantics* 17:335–95.
- Michel, Walter L. 1987. *Job: In the light of Northwest Semitic*. Vol. 1, *Prologue and first cycle of speeches: Job 1:1–14:22*. Biblica et orientalia 42. Rome: Biblical Institute Press.
- Muraoka, Takamitsu. 1979. On verb complementation in biblical Hebrew. *Vetus Testamentum* 29:425–35.
- . 1995a. A new dictionary of classical Hebrew. In *Studies in ancient Hebrew semantics*, ed. T. Muraoka, 87–101. Abr-Nahrain: Supplement Series 4. Louvain: Peeters.
- . 1995b. The semantics of the LXX and its role in clarifying ancient Hebrew semantics. In *Studies in ancient Hebrew semantics*, ed. T. Muraoka, 19–32. Abr-Nahrain: Supplement Series 4. Louvain: Peeters.
- , ed. 1998. *Semantics of ancient Hebrew*. Abr-Nahrain: Supplement Series 6. Louvain: Peeters.
- . 2002. *A Greek-English lexicon of the Septuagint: Chiefly of the Pentateuch and Twelve Prophets*. Louvain: Peeters.
- . 2003. Words of cognition in Job 28: Hebrew and Greek. In van Wolde 2003c, 93–102.
- Niccacci, Alviero. 1994. Analysis of biblical narrative. In *Biblical Hebrew and discourse linguistics*, ed. R. D. Bergen, 175–98. Dallas, Tex.: Summer Institute of Linguistics.
- . 1997. Basic facts and theory of the biblical Hebrew verb system in prose. In van Wolde 1997b, 167–202.
- Nida, Eugene Albert. 1975. *Componential analysis of meaning*. The Hague: Mouton.
- Nida, Eugene Albert, and Johannes P. Louw. 1992. *Lexical semantics of the Greek New Testament: A supplement to the Greek-English lexicon of the New Testament based on semantic domains*. SBL Resources for Biblical Study 25. Atlanta: Scholars Press.
- Nunberg, Geoffrey, Thomas Wasow, and Ivan A. Sag. 1994. Idioms. *Language* 70:491–538.
- O'Connor, M. 2002. Semitic lexicography: European dictionaries of biblical Hebrew in the twentieth century. In *Semitic linguistics: The state of the art at the turn of the twenty-first century*, ed. S. Izre'el, 173–212. Israel Oriental Studies 20. Winona Lake, Ind.: Eisenbrauns.
- Ohara, Kyoko Hirose, Seiko Fujii, Toshio Ohori, Ryoko Suzuki, Hiroaki Saito, and Shun Ishizaki. 2004. The Japanese FrameNet project: An introduction. In *Proceedings of the LREC 2004 workshop on building lexical resources from semantically annotated corpora*, 9–11. Lisbon: ELRA. <http://jfn.st.hc.keio.ac.jp/publications/JFN30July2004.pdf>.
- Ohara, Kyoko Hirose, Seiko Fujii, Hiroaki Saito, Shun Ishizaki, Toshio Ohori, and Ryoko Suzuki. 2003. The Japanese FrameNet project: A preliminary report. In *Proceedings of the conference Pacific Association for Computational Linguistics*,

- PACLING'03, ed. V. Keselj and T. Endo, 249–54. Halifax, Nova Scotia, Canada. <http://jfn.st.hc.keio.ac.jp/publications/PACLING03.pdf>.
- Östman, Jan-Ola, and Mirjam Fried, eds. 2005a. *Construction grammars: Cognitive grounding and theoretical extensions*. Constructional Approaches to Language 3. Amsterdam: J. Benjamins.
- . 2005b. The cognitive grounding of Construction Grammar. In Östman and Fried 2005a, 1–13.
- Padó, Sebastian, and Mirella Lapata. 2005. Cross-lingual bootstrapping for semantic lexicons: The case of FrameNet. In *Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI-05)*, ed. M. M. Veloso and S. Kambhampati, 1087–92. Pittsburgh, Pa.: AAAI Press. <http://homepages.inf.ed.ac.uk/mlap/Papers/AAAI051PadoS-1.pdf>.
- Payne, Thomas Edward. 1997. *Describing morphosyntax: A guide for field linguists*. Cambridge: Cambridge Univ. Press.
- Pearsall, J., ed. 1999. *The concise Oxford dictionary of the English language*. 10th ed. Oxford: Oxford Univ. Press.
- Peeters, Bert. 2000a. Setting the scene: Some recent milestones in the lexicon-encyclopedia debate. In Peeters 2000b, 1–52.
- . ed. 2000b. *The lexicon-encyclopedia interface*. Current Research in the Semantics/Pragmatics Interface 5. Amsterdam: Elsevier.
- Petruck, Miriam R. L. 1995. Frame semantics and the lexicon: Nouns and verbs in the Body frame. In Shibatani and Thompson 1995, 279–97.
- . 1996. Frame semantics. In *Handbook of pragmatics 1996*, ed. J. Verschueren, J.-O. Östman, J. Blommaert and C. Bulcaen, 1–13. Philadelphia: J. Benjamins.
- Pollard, Carl, and Ivan A. Sag. 1994. *Head-driven Phrase Structure Grammar*. Stanford: Center for the Study of Language & Information.
- Pope, Marvin H. 1965. *Job: Introduction, translation, and notes*. Anchor Bible 15. New York: Doubleday.
- Porten, Bezalel. 2003. The root pair **יָשַׁב** – **שָׁוָה** in Jeremiah. In *Hamlet on a hill: Semitic and Greek studies presented to Professor T. Muraoka on the occasion of his sixty-fifth birthday*, ed. M. F. J. Baasten and W. T. van Peursen, 375–82. Orientalia lovaniensia analecta 118. Leuven: Peeters.
- Pustejovsky, James. 1995. *The generative lexicon*. MIT Press.
- Queller, Kurt. 2003. Metonymic sense shift: Its origins in hearers' abductive construal of usage in context. In Cuyckens, Dirven, and Taylor 2003, 211–41.
- Radden, Günter. 2000. How metonymic are metaphors? In Barcelona 2000, 93–108.
- Rechenmacher, Hans. 2004. Kognitive Linguistik und althebräische Lexikographie. *Journal of Northwest Semitic Languages* 30 (2):43–59.
- Rice, Sally. 1987. Towards a cognitive model of transitivity. PhD diss., Univ. of California, San Diego.
- . 2003. Growth of a lexical network: Nine English prepositions in acquisition. In Cuyckens, Dirven, and Taylor 2003, 243–80.
- Richter, Wolfgang, ed. 1991–1993. *Biblia Hebraica transcripta*. 16 vols. Arbeiten zu Text und Sprache im Alten Testament 33. St. Ottilien: EOS Verlag.
- Rosch, Eleanor. 1978. Principles of categorization. In *Cognition and categorization*, ed. B. B. Lloyd and E. Rosch, 27–47. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Rosenbaum, Stanley Ned. 1974. The concept “antagonist” in Hebrew psalmography: A semantic field study. PhD diss., Brandeis Univ.

- Rothstein, Susan Deborah. 2004. *Structuring events: A study in the semantics of lexical aspect*. Explorations in Semantics. Malden, Mass.: Blackwell.
- Ruiz de Mendoza Ibáñez, Francisco J. 2000. The role of mappings and domains in understanding metonymy. In Barcelona 2000, 109–32.
- Ruppenhofer, Josef, Michael Ellsworth, Miriam R. L. Petruck, Christopher R. Johnson, and Jan Scheffczyk. 2006. *FrameNet II: Extended theory and practice*. Berkeley FrameNet Release 1.3. Berkeley, Calif. <http://framenet.icsi.berkeley.edu/book/book.pdf> (accessed October 17, 2008).
- Saeed, John I. 1997. *Semantics*. Introducing Linguistics 2. Oxford: Blackwell.
- Sáenz-Badillos, Angel. 1993. *A history of the Hebrew language*. Trans. J. F. Elwolde. Cambridge: Cambridge Univ. Press.
- Sawyer, John F. A. 1972. *Semantics in biblical research: New methods of defining Hebrew words for salvation*. Studies in Biblical Theology 24. London: SCM.
- Schmidt, Thomas. 2009. The Kicktionary: A multilingual lexical resource of football language. In *Multilingual FrameNets in computational lexicography: Methods and applications*, ed. H. C. Boas, 101–32. Trends in Linguistics: Studies and Monographs 200. Berlin: Mouton de Gruyter.
- Schmiedewind, William M. 2004. Prolegomena for the sociolinguistics of classical Hebrew. *Journal of Hebrew Scriptures* 5. <http://www.jhsonline.org>.
- Schönefeld, Doris. 2006. Constructions. *Constructions* SV1-1/2006. urn:nbn:de:0009-4-6678. <http://www.constructions-online.de/articles/specvol1/667>.
- Seifrid, Mark A. 2001. Righteousness language in the Hebrew Scriptures and early Judaism. In *Justification and variegated nomism*, ed. D. A. Carson, P. T. O'Brien and M. A. Seifrid, vol. 1, *The complexities of Second Temple Judaism*, 415–42. Wissenschaftliche Untersuchungen zum Neuen Testament 2/140. Tübingen: Mohr Siebeck.
- . 2004. Paul's use of righteousness language against its Hellenistic background. In *Justification and variegated nomism*, ed. D. A. Carson, P. T. O'Brien and M. A. Seifrid, vol. 2, *The Paradoxes of Paul*, 39–74. Wissenschaftliche Untersuchungen zum Neuen Testament 2/181. Tübingen: Mohr Siebeck.
- Shepherd, David. 2004. *Targum and translation: A reconsideration of the Qumran Aramaic version of Job*. Studia semitica neerlandica 45. Assen, The Netherlands: Van Gorcum.
- Shibatani, Masayoshi, and Sandra A. Thompson, eds. 1995. *Essays in semantics and pragmatics: In honor of Charles J. Fillmore*. Pragmatics and Beyond New Series 32. Amsterdam: J. Benjamins.
- Slingerland, Edward G. 2005. Conceptual blending, somatic marking, and normativity: A case example from ancient Chinese. *Cognitive Linguistics* 16 (3):557–84.
- Somers, Harold L. 1987. *Valency and case in computational linguistics*. Edinburgh: Edinburgh Univ. Press.
- Subirats Rüggeberg, Carlos. 2004. FrameNet Español: Una red semántica de marcos conceptuales. In *Cognición y percepción lingüísticas: Comunicaciones presentadas al VI Congreso Internacional de Lingüística Hispánica, Leipzig, 8–12 de octubre de 2003*, ed. E. Serra and G. Wotjak, 182–96. Valencia: Univ. of Valencia. http://gemini.uab.es/SFNpub/papers/Leipzig_Paper.pdf.
- Subirats Rüggeberg, Carlos, and Miriam R. L. Petruck. 2003. Surprise: Spanish FrameNet! Paper presented at the workshop on Frame Semantics, International Con-

- gress of Linguists, Prague. <http://gemini.uab.es/SFNpub/papers/subirats-petruck.pdf>.
- Sweetser, Eve. 1990. *From etymology to pragmatics: Metaphorical and cultural aspects of semantic structure*. Cambridge Studies in Linguistics 54. Cambridge: Cambridge Univ. Press.
- Sweetser, Eve, and Gilles Fauconnier. 1996. Cognitive links and domains: Basic aspects of mental space theory. In *Spaces, worlds, and grammar*, ed. E. Sweetser and G. Fauconnier, 1–28. Cognitive Theory of Language and Culture. Chicago: Univ. of Chicago Press.
- Talmy, Leonard. 1975. Semantics and syntax of motion. In *Syntax and semantics*, ed. J. P. Kimball, vol. 4, 181–247. New York: Academic Press.
- . 1978. Figure and ground in complex sentences. In *Universals of human language*, ed. J. H. Greenberg, vol. 4, *Syntax*, 625–49. Stanford: Stanford Univ. Press.
- . 1988. Force dynamics in language and cognition. *Cognitive Science* 12:49–100.
- . 2000. *Toward a cognitive semantics*. 2 vols. Cambridge, Mass.: MIT Press.
- Talstra, Eep, and Christof Hardmeier. 2004. *SESB editors' introduction*. Stuttgart: Deutsche Bibelgesellschaft. CD-ROM.
- Taylor, John R. 1995. *Linguistic categorization*. Oxford: Oxford Univ. Press.
- . 1996. *Possessives in English: An exploration in Cognitive Grammar*. Oxford: Clarendon Press.
- . 2002. *Cognitive Grammar*. Oxford Textbooks in Linguistics. Oxford: Oxford Univ. Press.
- . 2003. Categories and concepts. In van Wolde 2003c, 163–78.
- . 2004. Why Construction Grammar is radical. Review of *Radical Construction Grammar*, by W. Croft. *Annual Review of Cognitive Linguistics* 2:321–48.
- Thomas, D. Winton. 1937. Notes on some passages in the book of Proverbs. *Journal of Theological Studies* 38:400–403.
- . 1962. צִלְקוּת in the Old Testament. *Journal of Semitic Studies* 7:191–200.
- Thompson, J. A. 1980. *The book of Jeremiah*. New International Commentary on the Old Testament. Grand Rapids: Eerdmans.
- Thompson, Sandra A., and Paul J. Hopper. 2001. Transitivity, clause structure, and argument structure: Evidence from conversation. In *Frequency and the emergence of linguistic structure*, ed. J. L. Bybee and P. J. Hopper, 27–60. Typological Studies in Language 45. Amsterdam: J. Benjamins.
- Tomasello, Michael. 2000a. Do young children have adult syntactic competence? *Cognition* 74:209–53.
- . 2000b. The item-based nature of children's early syntactic development. *Trends in Cognitive Science* 4 (4):156–63.
- . 2003. *Constructing a language: A usage-based theory of language acquisition*. Cambridge, Mass.: Harvard Univ. Press.
- Tov, Emanuel, and Frank Polak. 1987. *The CATSS/Tov Hebrew-Greek parallel alignment module*. Philadelphia: CATSS, 2005. CD-ROM.
- . 2005. *The revised CATSS Hebrew/Greek parallel text: Manual and introduction*. Jerusalem: CATSS. CD-ROM.
- Trier, Jost. 1931. *Der deutsche Wortschatz im Sinnberzirk des Verstandes: Die Geschichte eines sprachlichen Feldes*. Heidelberg: Carl Winter.

- Tropper, Amram D. 2004. *Wisdom, politics, and historiography: Tractate Avot in the context of the Graeco-Roman Near East*. Oxford Oriental Monographs. Oxford: Oxford Univ. Press.
- Turner, Mark, and Gilles Fauconnier. 2000. Metaphor, metonymy, and binding. In Barcelona 2000, 133–45.
- Ungerer, Friedrich, and Hans-Jörg Schmid. 1996. *An introduction to cognitive linguistics*. London: Longman.
- van der Merwe, C. H. J. 1987. A short survey of major contributions to the grammatical description of Old Hebrew since 1800 AD. *Journal of Northwest Semitic Languages* 13:161–90.
- . 1994. Discourse linguistics and biblical Hebrew grammar. In *Biblical Hebrew and discourse linguistics*, ed. R. D. Bergen, 13–49. Dallas, Tex.: Summer Institute of Linguistics.
- . 1997. An overview of Hebrew narrative syntax. In van Wolde 1997b, 1–20.
- . 2004. Towards a principled working model for biblical Hebrew lexicology. *Journal of Northwest Semitic Languages* 30 (1):119–37.
- . 2006a. Biblical Hebrew lexicology: A cognitive linguistic perspective. *Kleine Untersuchungen zur Sprache des Alten Testaments und seiner Umwelt* 6.
- . 2006b. Lexical meaning in biblical Hebrew and cognitive semantics: A case study. *Biblica* 87:85–95.
- Van Hecke, Pierre J. P. 2001. Polysemy or homonymy in the root(s) *r'h* in biblical Hebrew: A cognitive-linguistic approach. *Zeitschrift für Althebraistik* 14 (1):50–67.
- . 2003a. Living alone in the shrubs: Positive pastoral metaphors in Micah 7,14. *Zeitschrift für die alttestamentliche Wissenschaft* 115:362–75.
- . 2003b. Metaphorical shifts in the oracle against Babylon (Jeremiah 50–51). *Scandinavian Journal of the Old Testament* 17:68–88.
- . 2003c. Searching for and exploring wisdom: A cognitive-semantic approach to the Hebrew verb *hāqar* in Job 28. In van Wolde 2003c, 139–62.
- . 2005a. Conceptual blending: A recent approach to metaphor, illustrated with the pastoral metaphor in Hos 4,16. In *Metaphor in the Hebrew Bible*, ed. P. J. P. Van Hecke, 215–31. Bibliotheca ephemeridum theologiarum lovaniensium 187. Leuven: Peeters.
- . 2005b. Pastoral metaphors in the Hebrew Bible and its Ancient Near Eastern context. In *The Old Testament in its world: Papers read at the winter meeting, January 2003, the Society for Old Testament Study and at the joint meeting, July 2003, the Society for Old Testament Study and het Oudtestamentisch Werkgezelschap in Nederland en België*, ed. R. P. Gordon and J. C. de Moor, 200–17. Old Testament Studies 52. Leiden: E. J. Brill.
- Van Leeuwen, Raymond C. 1986. Proverbs XXV 27 once again. *Vetus Testamentum* 36:105–14.
- van Steenberg, G. J. 2002a. Componential analysis of meaning and cognitive linguistics: Some prospects for biblical Hebrew lexicology (part 1). *Journal of Northwest Semitic Languages* 28 (1):19–37.
- . 2002b. Componential analysis of meaning and cognitive linguistics: Some prospects for biblical Hebrew lexicology (part 2). *Journal of Northwest Semitic Languages* 28 (2):109–26.

- . 2002c. Semantics, world view and Bible translation: An integrated analysis of a selection of Hebrew lexical items referring to negative moral behaviour in the book of Isaiah. DLitt diss., Univ. of Stellenbosch.
- . 2003. Hebrew lexicography and worldview: A survey of some lexicons. *Journal for Semitics* (Tydskrif vir Semitistiek) 12 (2):268–313.
- . 2005. *Semantics, world view and Bible translation: An integrated analysis of a selection of Hebrew lexical items referring to negative moral behaviour in the book of Isaiah*. Stellenbosch: SUN PRESS.
- van Wolde, Ellen J. 1997a. Linguistic motivation and biblical exegesis. In van Wolde 1997b, 21–50.
- , ed. 1997b. *Narrative syntax and the Hebrew Bible: Papers of the Tilburg Conference 1996*. Biblical Interpretation Series 29. Leiden: E. J. Brill.
- . 2003a. In words and pictures: The sun in 2 Samuel 12:7–12. *Biblical Interpretation* 11:259–78.
- . 2003b. Wisdom, who can find it? A non-cognitive and cognitive study of Job 28:1–11. In van Wolde 2003c, 1–35.
- , ed. 2003c. *Job 28: Cognition in context*. Biblical Interpretation Series 64. Leiden: E. J. Brill.
- Vega Moreno, Rosa Elena. 2004. Metaphor interpretation and emergence. *UCL Working Papers in Linguistics* 16:297–322.
- Verhagen, Arie. 2003. Semantics, inferential cognition, and understanding text. In van Wolde 2003c, 231–51.
- Verheij, Arian J. C. 1995. Review of *Biblia Hebraica transcripta, das ist das ganze Alte Testament transkribiert, mit Satzeinteilungen versehen und durch die Version ti-berischmasoretischer Autoritäten bereichert, auf der sie gründet*, vol. 6, 1 und 2 Könige, by W. Richter. *Journal of Semitic Studies* 40 (1):103–5.
- Whybray, R. N. 1998. *Job*. Readings: A New Biblical Commentary. Sheffield: Sheffield Academic.
- Wierzbicka, Anna. 1995. Dictionaries vs. encyclopaedias: How to draw the line. In *Alternative linguistics: Descriptive and theoretical modes*, ed. P. W. Davis, 289–315. Amsterdam Studies in the Theory and History of Linguistic Science, 4th ser., Current Issues in Linguistic Theory 102. Amsterdam: J. Benjamins.
- Wilson, Gerald H. 1984. “The words of the wise”: The intent and significance of Qohelet 12:9–14. *Journal of Biblical Literature* 103:175–92.
- Wolfers, David. 1995. *Deep things out of darkness: The book of Job; Essays and a new English Translation*. Grand Rapids: Eerdmans.
- Zerafa, Peter Paul. 1978. *The wisdom of God in the book of Job*. Studia Universitatis S. Thomae in Urbe 8. Rome: Herder.
- Ziesler, J. A. 1972. *The meaning of righteousness in Paul: A linguistic and theological enquiry*. Society for New Testament Studies Monograph Series 20. Cambridge: Cambridge Univ. Press.
- Zorell, Franciscus. 1984. *Lexicon Hebraicum Veteris Testamenti*. Rome: Pontificum Institutum Biblicum.

INDEX OF SUBJECTS

Page numbers for definitions and major discussions are in boldface.

- adjunct **99–100, 102–6**, 116, 128n52,
145, 148n, 168–170, 172–73, 261,
305, 307–8, 313, 315–16. *See also*
argument; head
- ancient language *See* language, ancient
- Andersen-Forbes text 170–71, 177–78,
270n79, 338
- annotation 109–110, **126–30**, 136–38,
140–42, 164–65, 177, 304–5, 321,
337–38
of completive use 231n66
FrameNet 109–110, 126–32, 136–38
Gov-X 30
HebrewNet 162, 164–74, 187–88,
190–92
of *hqr* terms 245, 283, 304–20
lexicographic vs. full-text 138, 142
of metaphors 226–27
null instantiation *See* null
instantiation (NI)
of target FEs 152–53
- annotation target **110**, 126, 128, 138,
152–53, 164–65, 172, 177, 304–5
- antonymy **19–22**, 56, 187n16, 245,
326n. *See also* opposition
- argument 94, 99–106, 116–20, 122n38,
128–29, 148n, 151, 153, 169, 172–
73. *See also* frame element (FE);
valence
- argument structure construction
74n19, 79n, 171, 176
- aspect (verbal) 6, 101, 171, 228n59,
229–30, 231n66, 255n31, 273, 300
- associative field 27–28, 32
- atelic *See* telic process
- [ATTEMPT] 123, 221–27, 296
- base 51–54, 110, 227n56. *See also*
domain; frame, semantic
- [BECOME AWARE OF] **208–10**, 217–18,
255, 257, 302, 304, 320–21
hqr analysis results 309, 316–17
- behaviour potential 96–99
- benefactive construction 291
- biblical Hebrew (BH)
ancient language 2–3, 43, 65, **181–**
84, 235, 334
antonyms 21n
aspect 6, 228n59, 255n31
cognate words in 30–31
cognitive linguistics, applicability of
182–84
cognitive linguistics literature 34,
35n7
construction classifications 170
corpus for study 184
frame semantics and 53–54, 108–9,
138, 142, 177–78
grammatical categories of 67
lexica 5, 65, **323–33**, 336
lexicology 2, 4, 43
metaphors 63, 65, 322, 334
parts of speech 95n58, 97–99
semantic analysis 3–4, 334
semantic roles 112n16
See also HebrewNet; interlinear
morpheme translation (IMT)
- blending (frame) 57n60, **59–61**, 63,
109, 160–61, 162n23, 255, 263, 303
and complex constructions 175
See also construction: blending
- Blending Theory (BT) 3, **60–61**, 63,
159
- categorisation 3, 28n41, 33n3, 34, 80,
81n30, 94, 329–31
of constructions 163, 171
of frame elements 122, 145
logical vs. ontological 330–31
- categorisation triangle **157–158**,
211n33, 214, 294n122
- category 28, 33n3, 34, 37n12, 46–47,
65–66, 81n30, 111n14, 113–14,
329–30
- basic 61, 213–14
- boundaries 46–48, 206, 234n
- complex 53n49
- semantic vs. cultural 40–41

- category, grammatical 6, **67–68**, **87–92**, 94, 113
 construction-specific 68, 87–88, 94, 166
 global/universal 6, 87–89, 91, 99
 language-specific 6, 94
 primitives (atomic vs. constructions) 68, 79, 87–92, 95, 99, 113, 334
 and sense relationships 29
 typological approach 95, 171n10
- causal chain 118, 121–22, 149
- causative 6, 31, 134, 291
- CausativeOf relation 134
- coded dependency 76n, 93n53. *See also* structural coding (strategies)
- coercion 79, **129**, 203, 229, 279, 290
- cognate relations *See* morphological relations
- Cognitive Grammar 35, **69–71**, 74n20, 74n22, 79n, 87n44, 99n, 103–4, 128, 136n69, 163
- cognitive linguistics 3–4, 28, **33–34**, 109, 164
 and ancient languages 181–84, 235
 and BH 323n2, 329
 and metaphor 57–64
 and sense relations 13n2, 14, 26n35, 28
 See also cognitive semantics;
 construal; construction grammar;
 frame semantics; metaphor
- Cognitive Metaphor Theory 57–64. *See also* domain: target vs. source; metaphor
- cognitive semantics 3–5, **33–34**, 66n, 182
- collocation 17, **23–25**, 32n50, 326
- comparative philology 183, 185
- compatibility **18**, 29n43, 192, 245, 248
- complement **100–102**, 105n74, 127, 129, 132, 167–68, 224n, 236n1, 268, 328
- complementarity 15n9, **19–22**, 56, 187
- completive use **230–31**, 234, 249, 263, 273, 278, 280, **300**, 305
- complex event 133–34, 176, **207–10**, 217–18, 221–22, 225–26, 234–35, 245, 256–57, 259, 273, 284, 286, 300, 318. *See also* subframe
- component (semantic) **76–78**, 164, 175
 and thematic roles 114n21, 176–77
- componential analysis 26, 49, 70n11, 335
- componential model of grammar **70–73**, 74n21, 78
- composition, semantic **23–25**, 72, 79, 85–86
- concept 33n3, 37n12, 48–55, 61, 66. *See also* construal
- concept profile **51–54**, 110, 119, 122, 129n, **152–153**, 319
- conceptual frame *See* frame, semantic
- conceptualisation *See* construal
- conceptual space 97
- conflation 61n, 127, 134n65, 153, 318
- constraint, interpretive **23, 36–38**, 41–43, 56, 65, 156, 162
 contextual 37–38, 46, 148, 156, 329
- construal 20–21, 24, 33–39, 41–47, 66n, 81n30, 204n22
- completive *See* completive use
- constraints on *See* constraint, interpretive
- contextual 37–38, 55, 148
- default **38**, 46, 53n51, **146–49**, 151, 162, 272–73, 277, 329
- of “explore,” “search,” “seek” **194–95**, 204, 211, 214–16, 220–21, 226–27, **230–35**, 236, 250, 255, 257, 259, 279–80, 287, 290, 292, 296, 300, 320, 324, 332
- of FEs 146–49
- metaphoric 58, 159–62
- perfective 228, 232, 255
- relational 102, 104, 129–30
- resultative 234
- semantic structure 105
 See also dynamic construal
- construct *See* instance, construction
- constructioncon **81, 83–85**, 114n21, 135n, 175–76
- construction 23, 68–69, **73–80**, 84, 132, 163, 175–76
 annotation 164, 172–73, 252, 304–5
 atomic vs. complex 79, 81, 175
 blending 84n39, 86–87, 170, 175
 complex 126, 166–70, 175–76
 entrenchment *See* entrenchment
 formal (syntactic) properties 74–79
 in HebrewNet 191–92
 inheritance 80–86
 instance *See* instance, construction

- in lexicology 125–26, 170
- malformed 6
- meronymic structure *See* meronymy
- in null instantiation 123–26
- as primitive unit of grammar 113, 163, 334
- schematic vs. substantive 79–81, 85–86, 94–95, 175–77
- semantic properties 74–77, 80–81, 86, 175
- support *See* support construction
- symbolic structure 74, 76–78, 93, 173
- target-framing 172
- unit *See* unit (symbolic)
- in valence description 172–73
- See also* constructicon; component (semantic); element (syntactic); form-meaning pairing; profile equivalent; structural coding (strategies)
- Constructional Functional Discourse Grammar 70n10
- Constructional Null Instantiation (CNI) 123–26, 149n7, 154, 308, 312
- construction element *See* element (syntactic)
- construction grammar 3–4, 67, 69–71, 73–87, 135n
 - integration with frame semantics 163, 175–76, 338
- Construction Grammar 69–73, 80, 108n8, 163
- construction instance *See* instance, construction
- construction role (CR) 164–69, 172–74, 191–92, 304–5
- construction type (CT) 164–74, 191–92, 269n73, 304–5
- construction types, BH
 - 0-*qāṭal*, Sbj-*qāṭal*, etc. 170–71
 - Adjective 30–31, 93, 97–99, 167–68, 250, 252
 - Construct-Absolute (Construct-Postconstruct) 98–99, 165, 178, 260n47, 261n49, 312, 315, 318–20
 - Ditransitive Clause 166n3
 - '*et* Phrase 165, 192
 - Existence Clause 237, 250, 268–69
 - Fronted Subject Pronoun
 - construction 170–71
 - Independent Personal Pronoun 167–68, 170
 - Indirect Object Clause 166
 - Infinitive Construct Verb 191
 - Intransitive Clause 166, 170, 267, 289, 298, 308, 310, 314
 - Mental/Cognitive Verb Clause 167–68, 171
 - Nominal Classifying Predication 78
 - Nonverbal Classifying Clause 250, 315
 - Noun Phrase (NP) 165, 167–69, 174, 203n21, 237, 252, 270, 283n109, 291, 307, 309, 311–12, 314–15, 317–20
 - Passive 286, 298, 306–7, 310–11
 - Possessive Noun Phrase 169
 - Predicate Adjective Clause 167–68
 - Suffixed Noun Phrase 167–68
 - Suffixed Pronoun 101n64, 167–68, 188, 191, 257–58, 265–66, 289–90
 - Transitive Infinitive Predication 191, 304, 306, 310
 - Transitive Participle Predication 252, 313
 - Transitive Verb Clause 165–66, 170–71, 176, 252n21, 306, 308, 310–11, 313–14, 317
- construction types, English
 - Declarative Finite Complement Clause 174
 - Depictive Clause 84, 85n40, 86
 - Ditransitive 121
 - in*-PP 169
 - Intransitive construction 84, 124
 - Location Verb Clause 169
 - Passive construction 80, 84, 91, 123
 - Predicate Adjective construction 75
 - Transitive Active Clause (Transitive Verb Clause) 6, 74–83, 121, 125, 169–71, 174, 176
 - Transitive DNI construction 125–26
- context 181
 - and construal 35, 37–38, 46–47, 55, 58, 66, 146, 148, 329
 - and meaning 23n25, 35–36, 40–41, 46, 64, 185n11, 199, 228n59, 232–33, 235, 328–29

- context (*continued*)
 in null instantiation 123–24,
 126n46, 153–57
 contextual constraint *See* constraint,
 interpretive: contextual
 contextual modulation 37, 38n14, 43–
 44, 45n30, 329
 contextual selection 37, 38n14
 converses 19, 22
 coreness set 133, 134n63, 172, 225
 cue-validity 327
- dead language *See* language, ancient
 deep structure 71, 80, 112
 default construal *See* construal: default
 Definite Null Instantiation (DNI) 123–
 26, 151, **153–56**, 173–74, 253, 284,
 305, 308–9, 312, 316
 degree of membership (DOM) 47n36
 denotation 13n3, 34
 dependence, semantic 31
 dependent, syntactic
 in cognitive grammar and RCG
 104–6, 269n73
 and target annotation 172, 304–5
 in traditional grammar 100, 115n22,
 128, 130
 See also adjunct; argument; head
 [DESIRE] 221, 223–26, 296
 dictionary 187n13, 162n25, 327n9
 meaning 43–44, 46, 329
 discourse analysis 171n9, 270n79
 distributional analysis 67n, **89–92**, 94,
 95n57, 99, 103
 distributional mismatch 90–92
 domain 34, 39n16, **48**, **51n44**, 66n,
 329–31, 336
 basic vs. abstract 52, 53n49, 62n69,
 158, 210, 214, 236, 300
 experiential 15, 158, 218n
 image schematic 62n69
 lexical vs. contextual 329–31
 matrix/network 52, 114, 133
 non-physical 81n30, 158, 211n33,
 220, 236
 physical 81n30, 196, 298n129, 300–
 301
 semantic *See* semantic field
 target vs. source 57–60, 210–11,
 214, 221, 226–27, 248, 299–300
 See also frame, semantic; metaphor
- domain blending *See* blending (frame)
 dynamic construal 3, **35–39**, **43–48**,
 55–56, 58, 63, 65–66, 148, **159–62**,
 182
- element (syntactic) **74–78**
 atomic, primitive elements 87–89
 correspondence with FEs 170, 172–
 74, 322
 substantive vs. schematic 75
 See also syntactic relations; syntactic
 role
 Embodied Construction Grammar 69,
 176
 encyclopaedic knowledge **39–43**, 54,
 55n57, 135. *See also* extra-
 linguistic aspects of meaning
 entrenchment 24, 44–46, 235, 321
 in ancient languages 65, 81n29,
 161–62
 constructions 80–86
 and full-text annotation 142
 metaphor and metonymy 60–66,
 160, 192, 271–72
 See also usage-based model
 event 76–77, 79n, 101–2, 104–5, 113,
 116, 119–122, 129, 133–35, 149,
 153, 227–29, 232–33
 complex *See* complex event
 durative 227
 frames 122, 129n, 207, 218, 256
 nouns 129, 136, 150–51, 321
 See also telic process
 evocation **36**, 41–42, 45n30, **49–52**, 55,
 57, 63, 65–66, 110–11, 118–20,
 128–29, 135, 160, 181
 of [EXPLORE] and [SEARCH] 195,
 197–199
 of frame elements 118, 148–49
 of [SEEK] 233–34
 See also construal
 Evokes relation 161, **192**, 227
 hqr 255n33, 256, 259–60, 263, 284,
 303–4, 309–322, 331
 See also Extension relation
 [EXAMINE PERSON] **216–18**, 260, 266,
 282–84, 287, 294, 303–4, 320–21,
 332
 in complex events 217–18, 245
 hqr analysis results 309, 312–17, 319
 profile variations 253–56, 302

- [EXPLORE] **196–202**, 256, 261, 291,
293, 296–97, 304, 320–21, 323, 332
compared with [SEARCH] and [SEEK]
196–202, 205–7, 251, 301
in complex events 207–8, 210, 245
“determine extent” *See under* extent
of a searched area
hqr analysis results 305–14, 316–19
metaphoric extensions **195**, 199,
211–20, 245, 255, 259, 282–84,
298–300, 320
profile variations 230–31, 234
extension *See* metaphor
Extension relation 159–61, 192. *See*
also Evokes relation
extent of a searched area 219, 248, 250,
261
“determine extent” **218–20**, 235,
244–45, 273, 280–81
figurative uses 219–20, 250, 283–84
extra-linguistic aspects of meaning
13n3, 35–36, 39, 43n23, 181. *See*
also encyclopaedic knowledge
- field *See* associative field; lexical field;
semantic field
- fientive terms 123, 218, 271, **271n82**
- figure/ground 36, 109, 111nn13–14
- Fluid Construction Grammar 69
- force dynamic interaction 81, 115, 149
- formal structure 74–79
- form-meaning pairing 72–74, 79–81,
84, 164, 175, 187
- frame, semantic 38, 39n16, **48–56**, 65–
66, 104–105, **108–111**, 113, 132,
148–49, 162–63, 175–77, 186, 234
of artifact nouns 119, 129, 152, 160
basic vs. abstract **52–53**, 133, 157–
58, 161n21, 176, 210–14, 236, 296
causative 134
inchoative/inceptive 134, 209, 217n,
218
network 51n44, 52–53, 66, 110, 157,
201–2, 204–5, 209–10
in Radical Frame Semantics 163–65
resultant 273, 302, 320
schematic vs. specific 62n69, **114**,
133, **157–59**, 161n21, 176, 201,
204, 209, 214, 334
specific/non-specific distinction
201–7, 288, 301–2
- stative **134**, 209, 217n, 218, 230,
259
See also blending (frame); domain;
event; metaphor; metonymy;
perspective; profile; relations,
frame-based; semantic structure;
subframe
- frame-bearing words 110, 126, **128–30**,
136, 138n72, 149, 154, 172, 177
- frame blending *See* blending (frame)
- frame element (FE) 38, 108–9, **111–22**,
135, 145, **164**, 175
annotation of 126–30, 152, 172,
191–92, 304–5
and concept profile 119, 122, 150,
152–53
conflation 127
and construction component/role
164–65, 175
in [EXPLORE], [SEARCH], [SEEK]
199–201, 219, 301–2
FE configuration 131, 172
in FrameNet reports 137–41
in HebrewNet 188, 304–5
incorporated 150, 152
inheritance 115
missing *See* null instantiation (NI)
in Radical Frame Semantics 164–65,
172
relations 133–35
semantic types 136
for slot-fillers 128–30
in telic utterances 229
valence description 131–32, 172–73
See also frame-specific role; semantic
role; thematic role
- frame element, core vs. peripheral 117,
118–20, 122, 128n52, 129–30,
145–52, 322
construal of 146–49, 151
for manner verbs 149–50
in Radical Frame Semantics 170,
172
relative and gradient nature 148–49,
151, 172n12
salience 116, 119, 146, 149, 151,
199–200, 206, 302, 322, 338
variation between LUs in a frame
149–52
See also coreness set; null
instantiation (NI)

- frame element, extra-thematic 120–22, 176, 200n16
- frame-evoking element (FEE) 109n11
- frame inheritance 133, 157–59, 160
[EXPLORE] and related frames 201–2, 223–24, 306, 308–9, 313
- FrameNet 5, 34–35, 107–9, 135, 163, 334–38
critique 89, 145–162
reports 137–41
See also annotation; relations, frame-based
- frame network *See* frame, semantic: network
- frame semantics 35n7, 48–54, 175–78, 323, 334
- Frame Semantics 3–5, 23, 34–35, 48nn38–39, 107–111, 114, 117–18, 122, 132, 134n62, 145, 163, 175, 334–38
- frame-specific role 111–117, 119, 145–46, 177. *See also* frame element (FE); thematic role
- Functional Discourse Grammar (FDG) 70n10
- functional grammar 70, 88, 108n8
- fuzzy boundary 46–48, 206n26
- generative grammar 13n1, 34, 68n3, 70–73, 74n21, 81n31, 88, 103, 112
- Goodness-of-Exemplar (GOE) 47n36
- governor 128, 130. *See also* dependent, syntactic
- Gov-X annotation 130
- grammar 163–64, 334
comparing theories 69–70nn8–10
See also Cognitive Grammar; construction grammar; functional grammar; generative grammar; lexicon-grammar continuum; Radical Construction Grammar (RCG)
- grammatical function (GF) 116n26, 126–28, 131–32, 138, 152
compared with CRs 163–66, 174, 191
- grammatical knowledge 73–74, 175
- head 18n15, 128, 167–70, 250, 270n78, 283n109, 304, 322
RCG approach 94, 103–6, 136
traditional approach 99–102, 136
- Head Driven Phrase Structure Grammar 69n8
- Hebrew *See* biblical Hebrew (BH)
- Hebrew Bible (HB) 183–84, 186, 336–337
- HebrewNet 4, 187–192, 214, 336–38
- hyperonymy 15–16, 45n30
- hyponymy 14, 15–16, 18, 19n19, 25–26, 43
- idiom 23–25, 82, 85–86, 137
evidence for construction grammar 68n4, 71–73, 74n19
- idiomatically combining expressions 72, 85, 137
- image 33, 35n8, 36, 146–48
examples with “explore”, etc. 195, 196n10, 211, 214–15, 219–21, 226, 237, 263, 282, 287, 292–94, 297–98, 300, 333
and metaphor 58, 61, 160, 162
- image schema 16n10, 34, 61–65, 83, 109, 157–59, 161n21
with “explore”, etc. 215, 236, 294, 296, 316, 325
- imperfect *See* perfective/imperfective
- inceptive (inchoative) vs. stative 134, 209, 217n, 218, 230, 231n65, 259
- InchoativeOf relation 134
- incompatibility 19–22, 28, 187n16, 245, 248. *See also* opposition
- incremental theme 229–32
- Indefinite Null Instantiation (INI) 124, 126, 151, 153–56, 266, 308, 312, 316
- indexical strategies 93, 173. *See also* structural coding (strategies)
- indexing 76n24, 93, 123, 167, 173, 192
- inheritance *See* construction:
inheritance; frame element (FE):
inheritance; frame inheritance
- Inheritance relation 114n22, 115, 133, 157–159, 160, 201, 204, 223–24, 306, 308–9, 313
- instance, construction 74, 81, 84n39, 86, 163–64, 175. *See also* utterance
- instantiation 127, 156–57. *See also* Morphology Instantiation; null instantiation (NI)
- instrument-subject alternation 149

- intensive 8, 21, 249
- interlinear morpheme translation (IMT)
6–9
- [INVESTIGATE] **211–16**, 220, 234, 263–
64, 266–67, 279–80, 292, 294, 296–
97, 303–4, 320–21, 332
- in complex events 217–18, 245, 257,
284, 300, 302n135
- “determine extent” *See under* extent
of a searched area
- hqr* analysis results 309–13, 317
- profile variations 234, 256–59, 273,
300
- landmark *See* trajector-landmark
structure
- language, ancient **2–3**, 5n9, 27n39, 65,
81n29, 161, **181–83**, 186–87, 235,
321–22, 334
- latency 122n38, 123n40
- lexeme 5, **14**, 17n13, 79, **109**, 191, 329.
See also lexical unit (LU)
- lexical categories 68, 88, 91, 97. *See also*
parts of speech
- lexical decomposition *See*
componential analysis
- lexical field 27–28. *See also* semantic
field
- Lexical Functional Grammar 69n8,
108n8
- lexical relation, types of 28–32. *See also*
sense relations
- lexical semantics **2n3**, 38–39, 65, 67,
321, 334
- lexical unit (LU) **14**, **109–11**, 121, 126,
153
arguments of 118
focus variations in a frame 149–52
FrameNet analysis 110, 135–40
HebrewNet analysis 164, 188–92
and null instantiation 123–26
target 110, 164, 172
valence description 131–32, 172–73
See also relations, frame-based
- lexicographic annotation *See*
annotation: lexicographic vs. full-
text
- lexicography **2**, 4–5, 26, 34, **65**, 151,
178, 329, 334, 336
of BH, special features 30–31, 65,
192
and discrete senses 43–45, 162, 234
and extra-thematic FEs 121–22
in FrameNet 126, 137–38
and metaphor 65, 159, 192
modern lexica, critique of 323–33
and null instantiation 123–26
See also dictionary; Model Q
- lexicology **2**, 4, 43, 125
- lexicon, mental 35, 64, 70–73, 135, 331
- lexicon-grammar continuum 35, 67,
71–73, 121, 124–25
- linguistics, cognitive *See* cognitive
linguistics
- linguistic typology *See* typology
- linguistic unit 34n3, 53
- linking rules 71, 74n21
- [LOCATE] 208–10, 221–22, 225–26,
234, 255, 289, 302, 317, 320, 327
- mapping *See under* metaphor
- matrix *See* network
- meaning
of ancient texts **2**, **182–83**, 185n11,
186–87, 235, 322, 327n9
cluster 43, 46
and concepts **33–34**, 38, 42, 46, 49–
50, 55n56, 182
construal *See* dynamic construal
and context 23n25, 25, 35–36, 40–
41, 46, 64n74, 154–56, 162n25,
185n11, 235, 328–29
dependence 31
descriptive vs. non-descriptive
16n10, 17, 18n16, 19, 22
dimensions of 17
encyclopaedic **39–43**, 55n57
and frames 48–49, 53, 65, 108–9,
112–13, 116, 135, 336
lexical 13, 17, 22–23, 30, 39–43,
44n25, 48, 55n57, 110n, 329
of metaphors **57–59**, 63–65
root 30–31
semantic field theory 25–27, 50
structural approach 13
See also construction; form-meaning
pairing; lexical unit (LU); sense;
sense relations; telic process
- mental spaces 55n56, 59–61
- meronymy **16**
in constructions 68, 74, 86, 92, 164
See also nesting

- metaphor 44, 56, **57–66**, 83, **157–62**, 195, 201, **210–227**, 237, 288–89, 291–92, 294, 329
 annotation of 192, 226, 337
 cross-linguistic mappings 63, 210, 212, 235, 322, 334
 [EXPLORE] **195**, 199, **211–20**, 245, 255, 259, 282–84, 298–300, 320
 and lexicography 44, 65, 159, 192
 mapping **58–64**, 159
 [SEARCH] 220, 222, 255n33, 287, 290, 299–300
 [SEEK] 220–27, 296
See also blending (frame); Cognitive Metaphor Theory; domain; image schema
- metonymy 44, 57, 60, 109, 159, 161
 [EXPLORE], etc. 193–94, 199, 217, 224–27, 234–35, 237, 255, 257–59, 260n44, 264, 271, 286, 298n131, 300–301, 312, 332
 vs. metaphor 57n60
 metonymic shift 234
- micro-sense 38n14, **45**
- Model Q 135, 330
- modification 95–102, 129, 318. *See also* contextual modulation
- modifier *See* adjunct
- morphological relations 14n4, 29–31
- morphology 33n2, 74n20, 75, 192, 223n50
- Morphology Instantiation 192
- negation (BH) 255n31, 265, 266n62
 'en in BH 268–71
 negated *hqr* 250, 268, 271–84, 316, 328
- nesting 86, 164, 166, 169. *See also* meronymy
- network 192, 338
 conceptual 52, 110, 135, 157
 metaphoric/metonymic 193, 217
 of sense relations 13, 25, 337
See also frame, semantic; network; Model Q; taxonomic network
- node 80
- noun, Noun Phrase (NP)
 arguments of 102, 119
 artifact 102, 119, 152, 160
 in BH 21n, 31, 97–99, 271
 event 102, 150–51, 321
 frame-bearing 126, 129, 136, 149–51, 154–55
 RCG analysis of 68, 79, 87–89, 91–99
 relational 102, 106, 152
 in sense relations 16, 21n, 29n43
 target with support verb 136–37
 valence of 102
- null instantiation (NI) 118n29, **122–26**, 138, 172, 192n, 304
 context, importance of 147–48, 151
 and core/peripheral FEs 153–57
See also Constructional Null Instantiation (CNI); Definite Null Instantiation (DNI); Indefinite Null Instantiation (INI)
- opposition 14, 15n7, 15n9, **19–22**, 26, 28, 50, **56**, 264, 300. *See also* incompatibility
- orthographic similarity 32
- paradigmatic relations **14–22**, 48–49, 107, 181, 183, 226, 326n, 335, 337
 in HebrewNet 187, 191–92
 for *hqr* 245, 248, 284–85
 semantic fields and 25–29
See also compatibility; hyponymy; incompatibility; meronymy; opposition; sense relations; synonymy; syntagmatic relations
- parallelism 187, 245, 251, 256–57, 260–61, 271, 276–77, 280–82, 284, 286, 290, 294–96, 325–26
- parts of speech 6, 16, 27, 29–30, **94–99**, 110, **117**
 typological prototypes 95–96
See also lexical categories
- perfective/imperfective **6**, 9, **228–33**, 255, 268, 273, 277, **300**, 305
- perspective 44–45, 116, 134
 [SEARCH] vs. [SEEK] **200–202**, 204–5, 207–8, 286–90, **301–3**, 308
- PerspectiveOn relation 134
- phonological relations 32
- phonology 7, 33n2, 70–71, 74n20, 75, 93, 99
- phrase type (PT) 116n26, **126–28**, 131–32, 136n67, 138, 152
 compared with CTs 164, 166, 173–74, 191

- polysemy 17, 24, 37–39, **43–46**, 63, 82–84, 218n, 220, 234–35, 322
- pragmatics 75–76
- pragmatic function 85, 95–96, 99
- vs. semantics 6, 35, 40, 329
- Precedes relation 133, 309. *See* subframe
- predication 95–97, 118, 129, 153, 167n4, 169–170, 227n56, 268–269
- primary information-bearing unit (PIBU) 104, 136
- profile 38, **51–54**, 103–5, 110, 122, **228n56**
- AREA VS. SOUGHT ENTITY 194, 201, 204–5, 220, 245, 254, 286, 288–89, 296, 298, 300, **301–3, 320**
- of target LU 134n65, 150, **152–53**, 172
- temporal **227–34**, 235, 245, 255, 273, 299, **300, 320**
- trajector-landmark alignment 111n14, 194
- variation in profiling 196, 229, 258–59, 318–19, 321
- profile equivalent **103–4**, 136
- propositional act (pragmatic function) 95–97, 99, 129
- purport 38–39, 43, 83
- purpose 199–208, 212–13, 217, 219, 225, 227n57, 236, 252, 291–93, 295, 305, 309, 316, 320, 323, 330
- qualia role 45n29, 129n54
- quasi-relation 29
- Radical Construction Grammar (RCG) 3–5, **67–69**, 76, 78, **87–106**, 114, 128, 136, **163–78**, 267n64, 268n73, 304, 334, 337
- nonreductionist model 88
- Radical Frame Semantics 4, 113–14, **163–65**, 174, 334–35, 337–38
- reference 13n3, 55, 95–98, 103n71
- register 22, 24, 37, 76, 85
- relational strategies 93, 173. *See also* structural coding (strategies)
- relations, frame-based **133–35, 157–61**
- annotation-to-frame 192, 337
- FE-to-FE 133–34
- frame-to-frame 114, 133–135, 137, 139, 157, 159, 188, 192, 337
- LU-to-frame 159, 188, 192, 303–4
- reports (FrameNet)
- annotation 138, 141
- frame 137, 139
- lexical unit 137–38, 140
- reports (HebrewNet) 188, 305–20
- resultant
- event/state 199, 208–9, 217–19, 235
- frame 273, 302, 320
- Resultative construction 74n19, 79n, 121, 176
- resultative sense 227, **232–34**, 249, 255, 257–58, 267, 280, 289–90, 299–302, 320
- reverses 19, 22
- role *See* frame-specific role; semantic role; thematic role
- root 4, 14n4, 29–31
- salience 105, 116, 196, 199, 322, 333
- SALSA II project 107n2, 109n11, 127n49, 138n72, 142, 155, 177–78
- “salvation” words 27–29, 186
- schematic construction role (SCR) 166
- [SCRUTINY] 157n16, 196n10, 199–202, 206n26, 208–18, 293n121, 302
- [SEARCH] **196–202**, 235, 253, 304, 320, 323, 332
- compared with [EXPLORE] and [SEEK] 198–207, 251, 297, 301–3
- in complex events 207–10, 220–23
- “determine extent” *See under* extent of a searched area
- hqr* analysis results 305–6, 308–9, 312
- metaphoric extensions 220, 222, 255n33, 287, 290, 299–300
- profile variations 230–32, 299–300, 320
- search out* ambiguity 249–50
- specific/non-specific ambiguity 202–7
- search out* ambiguity 249–50, 264, 323–24
- See Also* relation 135
- [SEEK] **196–202**, 249, 267n69, 280, 290–91, 295–96, 323
- compared with [EXPLORE] and [SEARCH] 199–205, 301–3, 308
- in complex events 207–10
- metaphoric extensions 220–27, 296

- [SEEK] (*continued*)
 profile variations 230, 233–34
 specific/non-specific ambiguity
 202–7
 selectional restriction 23–24
 semantic category 40–41. *See also*
 meaning; lexical
 semantic classes 95–97. *See also* parts
 of speech
 semantic component *See* component
 (semantic)
 semantic composition *See*
 composition, semantic
 semantic field 25–32, 130, 135
 semantic frames, comparison 48–50
 semantic frame *See* frame, semantic
 semantic relation 68, 76–78, 171
 construal of 129–30
 in frame description 164
 identification 93
See also relations, frame-based; sense
 relations
 semantic role 23, 77–78, 94, 104, 111–
 114, 175. *See also* component
 (semantic); frame element (FE);
 frame-specific role; thematic role
 semantics *See* cognitive semantics;
 Frame Semantics; lexical
 semantics; Radical Frame
 Semantics; structural semantics
 semantic structure
 of constructions 76–78, 176–77
 of a head/adjunct 104–5
 in Radical Frame Semantics 163,
 175
 semantic types 135–37, 231n66
 sense 13–15, 23–25, 43–46, 49–51, 55,
 58–60, 63–65, 82–84, 335
 abstract vs. physical 58–61, 161,
 194, 211n33, 215, 218, 236–37,
 260, 293–94, 296–97, 299, 332
 basic/prototypical 37, 44, 82–83,
 115, 160, 176, 223, 260, 283
 entrenched (conventional) 30, 44,
 60, 63–65, 82–84, 160–62, 235,
 272, 299, 321
 extended 153, 157–61, 235, 259
 intra-lingual vs. extra-lingual 13n3
See also categorisation triangle;
 meaning; metaphor; metonymy;
 polysemy
 sense components 26, 49–50
 sense relations 13–32
 cognitive approach 13n3, 14, 55–56,
 66
 and frames 48
See also paradigmatic relations;
 syntagmatic relations
 sense spectrum 45
 sentence annotation *See* annotation
 slot filler 129n, 130
 specific vs. non-specific 201–7, 209,
 232, 251, 255, 288–89, 301–2
 stative 6, 20, 21n, 30–31, 271n82, 318.
See also inceptive (inchoative) vs.
 stative
 structural coding (strategies) 93, 96–
 99, 173. *See also* coded
 dependency
 structuralism 13n1
 structural linguistics 13n1, 89n47
 structural semantics 3, 5, 13–14, 49, 55,
 55n55, 185, 334
 subframe 48n39, 133–34, 207–10,
 211n35, 225. *See* complex event
 Subframe relation 133–34
 support construction 123, 136–37
 support verb 136–37
 symbolic link 74–75, 77, 85n41, 93,
 173, 176. *See also* unit (symbolic)
 symbolic nature of grammatical
 knowledge 51–52, 71, 73–74, 175
 symbolic relation 76–78
 synchronic dependence 31
 synchronic linguistic analysis 29n44,
 30n45, 65, 185–87, 322
 synonymy 14, 15n9, 16–18, 29n43, 53,
 153, 187
 within [EXPLORE], etc. 196, 198–99,
 215, 245, 284, 286, 296–97, 327–28
 syntactic analysis 89, 116–17, 128, 183
 syntactic categories *See* category,
 grammatical
 syntactic relations 68, 74–78, 92–94,
 128, 163, 165, 170n, 191
 syntactic role 68, 74–78, 87–91, 94,
 115n24, 164
 syntactic structure *See* formal structure
 syntagmatic relations 14, 22–25, 27,
 29, 48, 56, 107, 181, 183, 335, 337.
See also paradigmatic relations;
 sense relations

- syntax 3, 33n2, 68, 70–80, 87–94, 108–9, 112, 128, 142
 relationship with semantics 5, 22–23, 67, 73–74, 112–117, 142
See also construction grammar;
 syntactic relations
- target *See* annotation target
- target domain *See* metaphor
- target-framing construction 172
- taxonomic network 80–81, 135n. *See also* constructicon; network
- taxonomy 15n9, **16**, 19n19
- telic process 227–34, 300, 305
- temporal profile *See* profile: temporal
- terminative sense 283
- thematic role 79n, **111–117**, 176–77
- theta (θ -) role *See* thematic role
- trajector-landmark structure **111n14**
 for [EXPLORE], etc. 194, 196–201, 205, 207, 220, 233, 235
 for *hqr*, etc. 288, 298, 306, 308, 310, 312, 320
- typological prototypes *See under* parts of speech
- typology 67–68, 89–92, 95–99, 322, 327. *See also* distributional analysis
- [UNDERSTANDING] **217–18**, 234, 245, 259, 273, 284, 300, 304, 309, 316–18, 321
hqr analysis results 317–318
 unit (symbolic) 76–77, 164
 universals 63, 68, 87–89, 92, 94, 96–97, 99, 191
- [UNKNOWN] 259, 286, 301, 304, 321
hqr analysis results 318–20
- usage-based model **80–81**, 105n75
- usage event 81
- Uses relation 133
- utterance 13n3, 64, 81, 83, 86, 89, **153–57**, 163, 263, 329. *See also* instance, construction
- in Radical Frame Semantics 172–74, 194, 304, 306–20
- in RCG 103–105
- in traditional grammar 92n51, 99–102
- verbs 92n51, 101, 171
- valence construction schema 173–74
- valence description **131–32**, **172–74**, 194, 304, 306–20
- valence group 131–32
- valence pattern 109, 117, 129, **131–32**, 138, 140, 142, 171, **172–74**
- verb 149–151, 153, 172, 188, 192
- verbal inflection, categories of 171n10
- Verb Inflection 192
- WIVU text database 170–71, 177–78, 270n79, 338
- valence **100–102**, **105**, 118, 133, 171, **172–74**
 adjectives 101–2
 in FrameNet 109, 117–18, 131–33, 138, 140, 142, 153n12, 335
 nouns 101–2, 129

INDEX OF BIBLICAL REFERENCES

Genesis		1:33	291
1:1	7	4:29	296
3:15	101n64	6:5	298n131
6:5	298	8:2	298
11:5	213	9:4, 5	21n
11:30	269n76	12:12	269n76
15:15	93	12:30	254n30
18:7	16	13:2	166n
31:34	219n	13:15[14]	241, 246, 248, 250, 295–96, 299, 303, 310, 312, 324, 326
31:35	286, 288–89	14:24	277n96
33:9	269n76	22:2	296
38:26	166n	22:26	269n77
39:4–5	269n76	23:7[6]	296
41:5	16	24:20	284n
42:15–16	295, 324	28:32	269n77
43:23	287	30:17	298n131
44:12	200, 286, 288–89, 301		
Exodus		Joshua	
2:11–14	233n72	2:1	293
4:19	225	2:22	208, 219n
4:24	222		
16:33	203n21	Judges	
22:2	269n76	1:23	291
Leviticus		5:15	251, 332n
11:10–11	269n76	5:16	216, 239, 247, 250, 299, 313, 315–16, 321, 332
13:3–4	268	6:29	296
13:3, 5, 6	213	6:34	165
22:13	269n76	9:53	203n21
26:6	270	18:2	188, 238, 246, 248, 251, 266n63, 297, 306, 328
Numbers			
5:8	269n76	1 Samuel	
10:33	291	1:12	213
13–16	285, 291–92	9:12	283
13:2, 16	198	13:14	233
13:17–18	198	14:17	213
15:39	292	16:16	204
21:8	213	17:28	298n131
23:10	247	20:1	225
35:23	225	20:12	216, 239, 246, 250n, 298, 313, 323
Deuteronomy		23:23	232, 289–90, 301
1:7	98	24:10	225
1:24	231	27:1	269n77

- 2 Samuel
 3:17 224
 3:18 224n
 10:3 190–1, 238–39, 245n11, 246,
 248, 251, 304, 306, 328
 12:3 269
 15:3 16
- 1 Kings
 1:3 219n
 3:21 214n
 7:2 277n97
 7:47 241–42, 246, 272–73, 275,
 277–79, 310
 18:29 271n84
 20:6 231, 288–89
- 2 Kings
 4:2 269n76
 10:23 215n42, 288–89
 18:26 98
 22:19 298n131
- Isaiah
 1:12 224
 1:17 296
 2:12–13 277n97
 5:29 270
 9:6[7] 269n77
 10:18–19 277n97
 10:33–34 277n97
 16:5 296
 28:10 23n27
 33:19 270n81, 271
 36:11 98
 40:28 242, 247, 272, 274, 276n93,
 280, 315, 321
 43:11 269n75
 44:6 269
 44:8 269
 51:13 257
 57:11 252
 63:3 270n78
 65:1 296
- Jeremiah
 2:10 216
 2:32 270
 6:27 284n
 8:17 269n77, 271n85
 9:6 295
- 17:1 298n130
 17:9–10 248
 17:10 239, 240n, 246, 248, 252,
 263n53, 294, 299, 303, 313,
 332
 21:14 277n97
 22:6–7 277n97
 22:14–15 277n97
 22:23 277n97
 22:28 270
 29:7 296
 29:13 296
 31:33 298n130
 31:37 238, 244, 248, 252, 279, 298,
 306
 38:4 296
 38:6 270n78
 41:8 287
 46:23 238, 246, 272, 275, 277–78,
 298, 307
 48:38 270n80
- Ezekiel
 11:19b 58, 60
 18:20 21n
 20:6 291
 33:12 21n
 34:6 296
 34:10 296
 39:12–16 253
 39:14 239, 245–46, 248, 251n, 253,
 254n30, 298, 301, 305, 308,
 324, 328
- Hosea
 8:8 270n80
 11:3 292n
- Amos
 9:3 232n68, 289–90, 301
 9:12 254n30
- Obadiah
 1:6 286, 288–89
- Zephaniah
 1:6 296
 1:12 287–89, 308
- Zechariah
 9:11 270n80

- Zechariah (*continued*)
 11:11 213
 13:9 293, 295, 324
- Malachi
 3:10 295, 325
 3:15 295, 325
- Psalms
 5:1 215
 7:3 270
 9:13 296
 11:4–5 294
 17:3 295
 24:6 296
 25:8 16
 26:2 295
 27:4 222
 33:11 298
 37:10 214n, 216
 38:13[12] 223n52, 296
 40:15[14] 223n52
 44:21[20] 240, 254
 44:22[21] 208n30, 209, 217, 234, 240,
 245–46, 248, 253, 254n28,
 255n33, 257, 298–302, 317,
 320, 324
 58:12[11] 269n75
 59:10 213
 64:7[6] 286–87
 66:10 295
 66:10–12 324
 70:3[2] 223n52
 71:13, 24 225
 77:7[6] 286–88, 301
 86:5 16
 88:5 270n81
 95:4 244, 247–48, 256, 259n43,
 276, 300–301, 320–21,
 332
 105:4 296
 115:7 281
 119:15 217
 119:95 215
 139:1 199, 208, 240, 246, 248, 299,
 313
 139:22 261n49
 139:23 240, 246, 248, 294–95, 299,
 314
 145:3 216, 242, 247, 269, 272–74,
 283n109, 315
- 146:3 271n85
 147:5 269n77
- Job
 1:6 262
 1:21 166
 1:22 257n37
 2:1 262
 2:10–11 257n37
 5:8–9 243
 5:9 216, 243, 247–48, 258, 270–
 74, 276n93, 280, 315
 5:24 213
 5:27 215, 241, 246, 248, 256,
 266n63, 299, 310
 7:18 295
 7:18–19 324
 8:8 234, 241, 247, 257, 258n41,
 300–301, 318, 321n142, 332
 9:10 243, 247–48, 272–74,
 276n93, 280, 315
 9:11 214n
 10:6 220, 296
 11:6–7 248
 11:7 244, 247–48, 256, 259,
 261n49, 276, 300–301, 319,
 321, 332
 12:11 294
 13:9 240, 246, 299, 301, 303, 314
 15:17 281
 17:11 298
 19:25 167–68
 23:10 293, 295, 324
 23:12 281
 26:10 261n49
 28 237, 260
 28:3 219n, 239, 246, 252n21, 260,
 283, 308
 28:27 216, 236, 237n5, 243, 246,
 262, 263n53, 300, 310
 29:16 242, 246, 299, 303, 310, 323
 32:11 216, 243, 246, 263, 299, 300,
 310, 328
 34:3 294
 34:6 295
 34:24 240, 247, 254n28, 272n86,
 275–79, 281, 299, 303, 315,
 326
 35:8 21n
 36:26 242, 247–48, 272–73, 275–
 77, 281, 316

- 37:23 273n89
 38:16 244, 247–48, 256, 259, 300–301, 319, 321, 332
 38:28 269n76
 39:1 213
 39:8 291, 296

 Proverbs
 2:1, 4, 5 221
 2:4 226, 287, 289–90, 302–3
 2:10 298
 3:3 298n130
 7:3 298n130
 7:7 214n
 10:2 21n
 10:11 78
 11:5 21n
 11:27 296
 12:26 291
 13:6 21n
 16:12 21n
 17:3 293, 295, 325
 18:17 240, 246, 298, 303, 314, 323
 20:27 231, 287–89
 23:30 216, 243, 246, 263, 300–301, 310, 332
 25:2–27 264, 282
 25:2 242, 244, 248–50, 264, 299, 310, 324
 25:3 237, 240, 247, 271–72, 274, 282, 298n129, 299–300, 304, 307–8, 316, 321
 25:6 98
 25:27 243–44, 265, 312, 321
 25:28 271n85
 28:11 241, 246, 266, 298, 314
 28:12 288n
 28:24 271n84
 29:10 225n54
 31:13 296

 Ruth
 1:12 269n76

 Song of Solomon
 1:6 213
 3:1 233
 3:2 203
 3:11 213
 6:8 270n81

 Ecclesiastes
 1:13 215, 219n, 285, 292
 2:3 215, 285, 292
 3:18 284n
 7:20 270n78
 7:25 285, 292
 7:29 223
 8:17 221
 12:9 243, 246, 248, 266, 311

 Lamentations
 3:40 216, 241, 246, 248, 286, 288–89, 299, 301, 314, 316, 332

 Esther
 9:2 225
 10:3 296

 Ezra
 9:12 296
 9:15 269n77

 Nehemiah
 2:13–15 284n
 3:21 261n49

 1 Chronicles
 4:40 16
 16:11 296
 19:3 239, 245n11, 246, 248, 306
 22:16 270n81
 29:3 269n76
 29:11 98

 2 Chronicles
 4:18 242, 246, 251, 272–73, 275–79, 311
 15:5 270n78
 24:10 272n87
 34:14 208n30

 Wisdom of Solomon
 8:8 278
 9:16 278
 19:18 278

 John
 7:52 215n42

 1 Peter
 1:11 215n42

INDEX OF AUTHORS

- Abbott, B. 203
Aitken, J. K. 13, 40, 183, 236–37, 256, 324
Allen, R. 249
Almog, J. 203–4
Alonso Schökel, L. 185, 236–37, 254, 326, 328
Alter, R. 281
Andersen, F. I. 46, 78, 90, 94–95, 100–101, 167, 170–71, 177–78, 184, 188, 224, 250, 252–53, 260, 267, 269–71, 281, 287, 289, 291, 326, 338
Anstey, M. P. xxii, xxv, 6–9, 67, 70, 74, 95, 129, 223, 267
Archer, G. L., Jr. 261, 267, 271, 279, 294
Aronoff, M. 171
Atkins, B. T. 39, 48–49, 107–8, 111, 113, 335
Atkins, S. 43, 108, 122, 131–32, 145–46, 155, 336
Baker, C. F. 53, 107–8, 110, 133, 136, 147, 149, 162, 177, 187, 191, 196, 218, 335
Baker, M. C. 84
Baldewein, U. 145
Balthasar, B. xxii, xxv, 7
Barðdal, J. 97
Barker, C. 117
Barlow, M. 80
Barr, J. 2, 15, 23, 181, 185, 187, 263, 336
Barsalou, L. W. 33, 111
Baumgartner, W. 199, 232, 256–57, 261, 264, 267, 277, 284, 286, 291–92, 295, 323–24, 327
Bergen, B. K. 69, 176
Berlin, A. 13, 23, 187
Block, D. I. 57
Boas, H. C. 40, 46, 56, 79, 87, 107–8, 121, 138, 338
Botterweck, G. J. 54, 193, 199, 214, 249, 256, 264, 279, 287, 293–94, 324
Brandt, L. 59–60
Brandt, P. A. 59–60
Bresnan, J. W. 69
Briggs, C. A. 252, 259, 263, 267–68, 285–86, 292, 296, 323–24, 326–27
Brown, F. 252, 259, 263, 267–68, 285–86, 292, 296, 323–24, 326–27
Brueggemann, W. 252
Bryce, G. E. 264–66
Burchardt, A. 107, 127
Bybee, J. L. 6, 32, 171
Carroll, R. P. 252, 278
Casenhiser, D. M. 73
Chang, N. 69, 73, 134, 146, 176
Cienki, A. 63
Clark, H. H. 36
Clausner, T. C. 48, 62, 66, 157
Clines, D. J. A. 184–85, 258–59, 326–28
Comrie, B. xxii, xxv, 6–7, 227–29, 232
Cook, K. W. 249
Coulson, S. 59–60
Cowley, A. E. 31, 252, 265, 268, 270–71, 292
Cremer, H. 54
Crenshaw, J. L. 249, 264, 267
Croft, W. xxii, xxv, 3–4, 6–7, 9, 15–16, 20–23, 33–36, 38–39, 43–53, 55–57, 59, 62–64, 66–78, 80–81, 84–85, 87–98, 103–5, 109–10, 112–15, 121–26, 129–30, 148–49, 153, 157, 162–63, 166, 171, 175, 227, 329, 334, 336–37
Cronin, B. 108, 133, 136, 177, 187, 191
Cruse, D. A. 3, 13–24, 28–30, 33–41, 43–53, 55–57, 59, 62–64, 68–70, 72–73, 80–81, 84–85, 88, 93, 109, 123–24, 148, 153, 162, 171, 181, 183, 227, 300, 329, 336–37
Crystal, D. 19, 63, 100, 102, 122, 134
Cuyckens, H. 33
Dahood, M. 256–57
Dancygier, B. 6, 59
Danesi, M. 62, 64
Darby, A. 85

- De Beule, J. 69
 de Blois, R. 14, 29–30, 34–35, 43, 135,
 236, 254, 259, 303, 323, 326, 328–
 33
 Dhorme, E. 257–58, 260, 262
 Diessel, H. 73, 80
 Dirven, R. 33
 Donald, T. 26
 Dowty, D. 112, 117, 229
 Driver, G. R. 288
 Driver, S. R. 252, 257–63, 267–68,
 281, 285–86, 292, 296, 323–24,
 326–27
 Dryer, M. 166

 Eco, U. 15, 35, 38–40, 61, 135, 162,
 329–30
 Eisemann, M. 282
 Elliger, K. 184, 251, 265, 278, 291
 Elwolde, J. F. 328
 Emerton, J. A. 185, 288, 291
 Erickson, R. J. 26
 Erk, K. 108–9, 127, 155, 177, 338
 Evans, V. 33, 51, 57, 62, 69, 227
 Eynikel, E. 247, 266

 Faber, P. B. 27–28
 Fabry, H.-J. 54, 193, 199, 214, 249, 256,
 264, 279, 287, 293–94, 324
 Falk, Y. N. 269
 Fauconnier, G. 57, 59–60
 Fellbaum, C. 40, 107
 Feyaerts, K. 34
 Filip, H. 229
 Fillmore, C. J. 3–5, 23, 34–35, 39, 48–
 49, 53–54, 67, 69–73, 99, 107–17,
 122, 124–25, 131, 133, 136–37,
 145–46, 149, 155, 163, 169, 175,
 177, 187, 191, 267, 334–35
 Fitzmyer, J. A. 260
 Floor, S. J. 283
 Fodor, J. A. 72
 Forbes, A. D. 46, 94–95, 100–101, 167,
 170–71, 177–78, 188, 224, 250,
 252–53, 260, 267, 269–71, 281,
 287, 289, 291, 338
 Forbes, G. 203
 Fortescue, M. 194, 211, 213–15
 Francez, I. 269–70
 Frank, A. 108
 Fried, M. 70, 88

 Garey, H. B. 227–28
 Geertz, C. 336–37
 Gertner, M. 295
 Gesenius, W. 31, 252, 265, 268, 270–
 71, 292
 Gibson, A. 27
 Gildea, D. 114
 Goldberg, A. E. 69–70, 72–74, 79–81,
 86–87, 92, 121, 171
 Gordis, R. 260, 262, 276
 Grady, J. E. 59–60
 Grandy, R. E. 47
 Gray, G. B. 257–62, 281
 Green, M. C. 33, 51, 57, 62, 69, 227
 Greenberg, J. H. 68
 Groves, A. xxi, 188
 Gurevich, O. 73

 Habel, N. 236, 260–61
 Halliday, M. A. K. 230
 Hanks, P. 64
 Harder, P. 38
 Hardmeier, C. 127, 270
 Harris, R. L. 261, 267, 271, 279, 294
 Harris, S. L. 237, 262
 Harris, Z. S. 89
 Hartley, J. E. 281
 Haspelmath, M. xxii, xxv, 7
 Hauspie, K. 247, 266
 Hjelmslev, L. 38–39
 Hoftijzer, J. 192
 Holladay, W. L. 252, 257, 278, 294
 Hopper, P. J. 80, 105
 Huddleston, R. 203
 Hurford, J. R. 19
 Hwang, S. J. J. 270

 Ibarretxe-Antuñano, I. 196, 218

 Jackendoff, R. 33, 230
 Johnson, C. R. 54, 99, 108–9, 111–12,
 116, 122, 131, 133, 136, 145–46,
 155
 Johnson, M. 34, 57, 61–62
 Joüon, P. 30, 237, 292
 Jurafsky, D. 114

 Katz, J. J. 72
 Kaufman, S. A. 260
 Kautzsch, E. 31, 252, 265, 268, 270–71,
 292

- Kay, P. 69–73, 108, 124–25, 169
 Kemmer, S. 80
 Kittay, E. F. 25, 35
 Koehler, L. 199, 232, 256–57, 261, 264,
 267, 277, 284, 286, 291–92, 295,
 323–24, 327
 Kolehmainen, L. 79
 Kövecses, Z. 64
 Kowalski, A. 107, 127, 155, 338
 Kroeze, J. H. 100, 177, 268, 277, 283
 Kugel, J. L. 281
- Lakoff, G. 28, 33–34, 46, 48, 52, 57, 59,
 61–63, 69, 212
 Lambrecht, K. 112, 203
 Langacker, R. W. 28, 30, 33–37, 39–40,
 42, 44, 46, 48, 51–53, 55, 57, 60, 62,
 67, 69–71, 73–74, 80–81, 87, 99,
 102–5, 110–11, 129, 133, 136, 148,
 153, 157, 172, 182, 194, 196, 227–
 28, 230–31, 234, 269, 304
 Lapata, M. 109, 338
 Larjavaara, M. 79
 Lee, J. A. L. 2, 23
 Lehrer, A. 25–26, 35
 Levin, B. C. 149
 Liddell, H. G. 246–47
 Loader, J. A. 183–84
 Löbner, S. 13–15, 19, 22, 34, 40–42,
 47–48, 101–2, 124
 Loewenstamm, S. E. 287
 Longacre, R. E. 23, 270
 Louw, J. P. 15, 26, 44, 329, 331
 Lowery, K. E. 112
 Lübke, J. C. 27, 323, 336
 Lundbom, J. R. 252, 278, 298
 Lust, J. 247, 266
 Lyons, J. 2, 6, 13–15, 17, 19, 20, 23,
 26, 55, 63–64, 154–56, 185, 204,
 271
- Mairal Usón, R. 27–28
 Matthews, P. H. 13, 100, 122
 Matties, G. H. 252
 McDonald, E. 230
 McKane, W. 252, 278
 Michaelis, L. A. 79, 87
 Michel, W. L. 257, 259
 Muraoka, T. 13, 25, 30, 105, 182, 184,
 218, 237, 247, 260, 292, 326–27
- Narayan, S. 69
 Narayanan, S. 134, 146
 Naudé, J. A. 100, 268, 277, 283
 Niccacci, A. 270
 Nida, E. A. 15, 26, 70, 331
 Nunberg, G. 24, 71–72, 85
- Oakley, T. 59–60
 O'Connor, M. xxii, 1, 6, 8–9, 24,
 30–31, 78, 97–98, 100, 170,
 184–85, 203, 237, 250, 254–55,
 258, 267–68, 270–71, 277, 283,
 323, 336
 O'Connor, M. C. 69–73, 108
 Ohara, K. H. 107, 338
 Östman, J.-O. 70, 88
- Padó, S. 107, 109, 127, 155, 177, 338
 Patterson, R. D. 252
 Payne, T. E. 228
 Pearsall, J. 110, 137
 Peeters, B. 40
 Petruck, M. R. L. 54, 99, 107–9, 111–
 12, 116, 122, 131, 133–34, 136–37,
 146, 175, 187, 338
- Pinkal, M. 127
 Polak, F. 247, 254
 Pollard, C. 69
 Pope, M. H. 258, 260, 262
 Porten, B. 32
 Pustejovsky, J. 45, 129
- Queller, K. 63
- Radden, G. 57
 Rechenmacher, H. 34, 323
 Rice, S. 63, 74, 79, 81, 89–90
 Richter, W. 177
 Ringgren, H. 54, 193, 199, 214, 249,
 256, 264, 279, 287, 293–94, 324
 Rosch, E. 28, 46
 Rosenbaum, S. N. 26
 Rothstein, S. D. 229–30
 Rudolph, W. 184, 251, 265, 278, 291
 Ruiz de Mendoza Ibáñez, F. J. 57, 58
 Rundell, M. 43, 108, 132, 336
 Ruppenhofer, J. 48, 79, 89, 100, 107–8,
 115, 118, 120–22, 124, 126–30,
 133–34, 136–38, 145–48, 150–51,
 154–56

- Saeed, J. I. 13
 Sáenz-Badillos, A. 185
 Sag, I. A. 24, 69, 71–72, 85
 Sato, H. 43, 108, 132, 336
 Sawyer, J. F. A. 22, 26–30, 32, 186–87, 261
 Schökel, L. A. *See* Alonso Schökel, L.
 Schmid, H.-J. 5, 33–34, 40
 Schmidt, T. 134, 335
 Schniedewind, W. M. 184–85
 Schönefeld, D. 69
 Scott, J. B. 271
 Scott, R. 246–47
 Seifrid, M. A. 54
 Sethuraman, N. 73
 Shepherd, D. 281
 Sicre Díaz, J. L. 237
 Simpson, J. A. 2, 222, 249, 302
 Slingerland, E. G. 63
 Steels, L. 69
 Subirats Rüggeberg, C. 107, 338
 Sweetser, E. 6, 57, 59, 196, 199, 218

 Talmy, L. 33, 36, 81
 Talstra, E. 127, 270
 Taylor, J. R. 33–35, 37, 39, 41, 44, 46, 51–52, 55, 62, 68–70, 84, 92, 94, 103–5, 157–58, 181, 203
 Thomas, D. W. 247, 266
 Thompson, J. A. 252, 278
 Thompson, S. A. 80, 105
 Tippet, G. 85
 Tomasello, M. 73, 80–81
 Tov, E. 247, 254
 Trier, J. 25
 Tropper, A. D. 281
 Tsevat, M. 193, 199, 249–250, 264, 267, 293–94, 297, 324–25
 Turner, M. 34, 57, 59–60, 62

 Ungerer, F. 5, 33–34, 40

 VanGemerén, W. A. 250, 279, 324–26
 van der Merwe, C. H. J. 2, 33–35, 46–47, 100, 171, 185, 268, 277, 283, 323, 329
 Van Hecke, P. J. P. 34, 60, 183, 194–98, 201, 205–7, 211, 218–20, 236, 245, 250–51, 273, 278, 280, 320
 Van Leeuwen, R. C. 244, 264–66

 van Steenberg, G. J. 26, 34–35, 40, 43–44, 46–47, 54, 70, 323, 335
 van Wolde, E. J. 33–34, 46, 171, 183, 193, 236, 260
 Vega Moreno, R. E. 59
 Verhagen, A. 33, 181
 Verheij, A. J. C. 177

 Waltke, B. K. xxii, 1, 6, 8–9, 24, 30–31, 78, 97–98, 100, 170, 185, 203, 237, 250, 254–55, 258, 261, 267–68, 270–71, 277, 279, 283, 294, 324
 Wasow, T. 24, 71–72, 85
 Weiner, E. S. C. 2, 222, 249, 302
 Whybray, R. N. 258, 263
 Wierzbicka, A. 40
 Wilson, G. H. 267
 Wolf, H. 279
 Wolfers, D. 260–61
 Wooters, C. 107, 110, 335

 Zerafa, P. P. 260, 262
 Ziesler, J. A. 54
 Zorell, F. 264

INDEX OF HEBREW TERMS

Page numbers for major discussions are in boldface.

- אֶבֶן 58, 260–61
 אהל 31
 אֶזֶן 245, 248, 264, 266–67, 285, 327
 אֶזְנֵי הָעַם 98–99
 אֶזֶר 134
 אֶין 268–71, 276–80, 283n109, 321, 326
 אֶל 8
 אֶפֶל וְעֶלְמֹת 260–61
 אֶרג 31
 אֶרֶץ 237, 251, 256, 261, 283–84, 304, 328
 אֶשֶׁר 98–99
 אֶת 8, 165, 192

 בֶּ 8, 93, 270n78
 בחן 248, 252, 259n42, 284–85, **293–95**, 297, 304, 324–25, 328
 בָּטֶן 331
 בֶּין 214n, 215–16, 221, 266, 286–87, 290
 בקר 285
 בֶּקֶר, בֹּקֶר 31
 בקש 193, 198, 203–4, 208, 220–25, 233–34, 251, 254n30, 267n69, 284–85, 290, 292, **295–97**, 300
 frame evoked 198, 208, 234, 295
 metaphoric use 220, 292
 resultative use 233
 “seek” 203, 208, 220, 290, 292
 בָּרִיא 16
 בָּרִית 54
 בֶּשֶׂר 58–59

 גֹּאֵל 167
 גֹּדֵל 97–98

 דָּבַר 264
 דָּרַךְ 288, 299, 316, 332
 דֹּרֶשׁ 193, 223n52, 245, 248, 254n30, 284–85, **295–96**, 300, 326–28
 frames evoked 245
 “inquire about” 248, 295
 “investigate” 295
 “seek” 296

 הָבִיט 216–17
 הוֹשִׁיעַ 28
 הִיָּה 269
 הִיטָב 250
 הִכָּה 233
 הִתְהַלֵּךְ, הִלֵּךְ 215, 245, 248
 הִצִּיל 28
 הרג 233n72

 וְ 281

 זֹאת 254
 זָהָב 293

 חֶזֶק 30
 חִי 167
 חִכְמָה 236–37, 263, 292, 298
 חִלָּץ 28
 חִפָּץ 223n52
 חִפֵּר 285
 חִפֵּשׁ 208, 231–32, 245, 247–48, 250n, 255, **286–90**, 297, 301–3, 320, 328
 “examine” 245, 248, 285
 resultative use 289–90, 301
 “search” 208, 245, 248, 285–87, 289
 “seek” 285, 286, 302–3
 temporal profile 232, 301–2
 חָק 251
 חָקֵר (root) 4, **193–95**, 208, 211n33, **215–17**, 219–20, 233–34, **236–38**, **244–46**, 248–51, 254, 254, 256, 259–61, 263–66, **268**, 271–73, 276–77, 279–80, 283, **284–86**, 290, 294–95, **297–304**, 307, 309, 312, 316, **320–21**, 323–28, 330, 332–36
 “explore” 193, 195, 259, 272, 286, 300–301, 307, 332
 frames evoked 193–94, 217, 219, 245, 248, 251, 261, 280, 297, 301–2, 304–21, 332
 instances (categorised) 238–244
 judicial uses 303
 metaphoric extension 193–95, 215–16, 237, 245, 298–301, 320, 325

- metonymic extension 193–94, 217, 30
 negated instances 268–79
 paradigmatic relations 245, 248, 284–97, 301–3, 324–25, 327–28
 physical concept (basic) 195, 208, 236–39, 251, 300–301
 resultative use 217, 233, 255, 257–58, 299–302, 320
 “search” 193, 195, 272, 286, 300, 312, 332
 “search out” 249–50, 259
 temporal profile 300
 translations in LXX/Versions 244–47, 254n30, 256, 263n55, 265–66, 268, 271–77, 284
- חָקַר (*qal*) 109, 153, 191, 193, 198, 215, 234, **236–37**, 246, 248, 250, 252–55, 257, 260–61, 263–64, 266, 279, 293, 296, 299–301, 304–11, 313–14, 317, 324, 324n5, 326, 328
 completive use 263
 “discover” 240, 253–56
 “examine” 240–41, 256, 299
 “explore” 193, 198, 237–38, 243, 251–52, 257, 261, 264, 279
 frames evoked 198, 209, 257, 263, 296, 306, 308–10, 313, 317
 “investigate” 241–42, 250, 263–64, 296, 299
 metaphoric extension 153, 215, 236–37, 260
 metonymic extension/shift 255, 257, 300
 paradigmatic relations 248, 250
 resultative use 255, 257, 299–302
 “search out” 249
 “search” 193, 198, 238–43, 250, 253, 255, 279
 temporal profile 255, 300
 translations in LXX 244, 246–47, 260n45, 263
- חָקַר (*pi'el*) 193, 246, 248, 267, 309, 311–12, 324n5
 “explore” 266
 frame evoked 309, 311
 paradigmatic relations 248
 “search” 243–44
 translations in LXX/Versions 246–47
- חָקַר 153, 193, 214, 234–35, 237, 247–48, 250–51, 256, 258–59, 266, 268, 270–72, 273n89, 274–76, 278–83, 298n129, 300–301, 305–9, 311–16, **319–21**, 321n142, 326–28, 332
 completive use 280
 “explore” 243
 frame evoked 214, 234, 258–59, 266, 280, 286, 300, 307, 311–12, 314–15, 318–21, 332
 “investigation” 240–42, 259, 268, 280, 299
 metaphoric extension 153, 237, 259, 281–83, 298n129
 metonymic extension/shift 234, 258–59, 286, 300–301, 332
 negation 268–72, 273n89, 274–76, 278–83, 321, 328
 paradigmatic relations 248
 resultative use 258, 301
 “searchings” 237, 239–43
 temporal profile 234, 259
 translations in LXX/Versions 244, 246–47, 260n44, 268, 272, 274–76, 281
- חָשַׁב 214n
- טוֹב 16, 93, 265
- יָדַע 167–68, 170, 199, 218, 221, 245, 248, 259n42, 277, 282, 286, 292, 295, 318, 326–28
- יָהוּה 165–66, 248, 252, 263n53, 291, 292, 295
- יָעַר 277–78
- יָקַר 244, 265n60
- יָשׁ 269
- יָשַׁב 32
- יָשַׁע, יֵשַׁע 28–29
- יָשַׁר 16
- כָּ 8
- כָּבֵד 265–66
- כָּבֹד 264–66, 321
- כּוֹן 257, 262
- כֹּלָה 28
- כְּלִיּוֹת 299
- כִּנְיָ 331
- לָ 8, 252, 261, 269, 270n78, 283
- לֹא 265–66, 268, 271, 276–79, 282, 326

- לב 57–61, 237, 250–52, 254, 283–84,
 298–99, 316, 332
 לבש 134, 165
 לְמִטָּה 252–53
 לקח 286, 290
 מדד 248
 מִחְקֵר 193, 247–48, 256, 301, **319–21**,
 332
 “explore” 256
 frame evoked 286, 319, 332
 metonymic extension/shift 286,
 300–301
 paradigmatic relations 248
 translations in LXX/Versions 247,
 256, 276
 מִטְמוֹן 290
 מלט 28
 מֶלֶךְ, מֶלֶךְ 31, 264–65
 מִמְסָד 263, 332
 מן 8, 270n78, 271, 289–90
 מִסְפָּר 248, 280
 מצא 208n30, 221, 286, 289
 מקל 331
 מִשְׁפָּט 27, 31
 מִשְׁקָל 279–80
 מִשֵּׁשׁ 285, 289
 נבט 216–17
 נִבְדָּה 248
 נִהַר 97
 נִחְקֵר (*nip'al*) 193, 246, 252, 268, 275,
 277n96, 278–80, 306–7, 309–11
 “explore” 238, 253
 frame evoked 279, 306–7, 310–11
 “investigate” 241–42, 280
 negation 268, 275, 277–79
 paradigmatic relations 248
 “search” 238
 translations in LXX/Versions 244,
 246, 268, 273n91, 275, 277, 278n98
 נכה 233
 נִכְח 16
 נסה 285, 294
 נִפְשׁ 225
 נצל 28
 גֵּר יֵהוּה 287
 נִשְׁמַת אָדָם 287
 נתן 166
 סֶלַח 16
 ספר 262
 עבר 245, 248
 עזר 28
 עִיר 191, 304, 328
 על 8
 עם 8
 פלט 28–29
 פלס 285
 פצה 28
 פקד 213, 285
 פרק 28
 צדק, צִדִּיק, צִדִּיק, צִדִּיק 14, 21n, 27, 30–
 31, 53–54, 78, 291, 337
 צרף 285, 293–95, 325
 קדש 31
 ראה 198, 199n12, 213, 216, 245, 248,
 286, 289, 292–93, 316
 רגל 192, 231, 248, 251, 284–85, **292–93**,
 297, 328
 רוח 165
 ריב 303
 רֶדֶךְ 16
 רָעָה 223n52, 225, 291, 296
 רָשַׁע 14, 21n
 שאל 248, 285, 326–27
 שָׁבַר 28
 שֵׁד 28
 שוב 32
 שחר 285
 שְׁלוֹם 296
 שְׁמִים 237, 283–84
 שָׁמֶן 16
 שמר 213
 שפט 27, 31
 תְּבוּנָה 263, 280, 286–87, 290
 תוֹעֲפּוֹת 248
 תור 198, 215, 284–85, **290–93**, 297, 328
 תְּכֵלִית 248, 261
 תכן 285
 תַּעֲלָמָה 248, 254, 298
 תקן 266–67